FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

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Proposed Rules Under Additives Law Announced

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — The Food and Drug Administration this week set forth proposed regulations to carry out provisions of the 1958 Food Additives Amendment to the federal pure food and drug law.

It should be noted that the additives amendment, like the food and drug law, applies to feeds for livestock and poultry as well as food for humans.

The purpose of the amendment is to prohibit use of additives which have not been adequately tested to establish their safety. To be used, an additive must first have been found safe for the intended use.

After the proposed regulations are officially published in the Federal Register, 30 days will be allowed for the filing of suggested changes, deletions or additions. The regulations then will become effective at a later date.

118 Chemicals Listed

Included in the regulations is a list of 118 food chemicals which are believed by FDA to be exempt from testing requirements of the law because they are generally recognized as safe for their intended use.

(The complete list appears at the end of this story. Many of the chemicals are not used in feed, but the complete list is given. The list includes nutrients and certain other substances used in feed but does not include drugs incorporated in feeds.)

(Turn to ADDITIVES, page 77)

Fish Meal Situation Tightens as Result of Poor Fishing Season

NEW YORK—One of the poorest domestic fishing seasons on record has created a very tight situation in the fish meal market this year, according to recent reports to Feedstuffs. Lack of sufficient supplies coupled with the accepted nutritional requirements of broiler and turkey starter and grower feed business have boosted the cost of menhaden meal some $30 ton since the start of the 1958 season.

Eastern and Gulf Coast fisheries attribute the tight supply and subnormal catches to unusually cold water conditions which lasted well into the summer along the Atlantic Coast and the subsequent failure of

(Turn to FISH MEAL, page 4)

Education Program on Medicated Feeds Set

CHICAGO—"A drug relations program to foster better understanding and appreciation of the proper role of medicated feeds has been jointly launched by American Feed Manufacturers Assn. and the suppliers of feed medicaments. The educational program will be directed toward livestock and poultry feeders, veterinarians, federal and state agencies, educators and other interested parties."

So stated W. E. Glennon, AFMA president, in a bulletin summarizing three meetings in New York and Chicago between special committees of the association and drug producers.

The multi-phase action program included suggestions which would strengthen advertising, promotion and educational activities.

Advertising personnel of feed manufacturers and drug producers were requested to continue emphasizing: "Coccidiostats, as an aid in the prevention and control of coccidiosis, have an important function in poultry feeds. However, these drugs never were intended to be a substitute for sound sanitation and good management in the feed lot."

The educational program called for coordinated effort by all manufacturers of feed and drugs to renew their emphasis on the important principles of sound management and sanitation practices in production of livestock and poultry. At the same time, the true role of drugs in feed, enabling farmers to produce meat, milk and eggs at the lowest possible cost, can be the basis for a coordinated approach through educational mediums.

Coccidiosis Problem Cited

Mr. Glennon said: "The need for such a program has been accentuated in recent months due to the increasing prevalence of coccidiosis. A number of factors have been responsible for this situation."

The AFMA president continued: "In an effort to render service in the control of common diseases in poultry, the feed manufacturer has found himself caught between the 'claims' of drug producers, and the 'hopes' of medicated feed users. The 'grass roots' promotion behind the use of

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Ohio Dealers Told:

Integration Here to Stay; Will Have to Adjust to Changes

By DON E. ROGERS
Feedstuffs Staff

COLUMBUS, OHIO—Vertical integration in one form or another is here to stay in the feed business and seems likely to increase further. These facts were pretty well established in a grain, feed and farm supply marketing conference Nov. 20 sponsored by the department of agricultural economics and rural sociology, Ohio State University, Columbus.

The theme of the conference, which was attended by over 400 feed and farm supply dealers and feed manufacturers, was "Let's Discuss Vertical Integration and Contract Feeding."

An imposing list of university and industry specialists, who obviously have studied all facets of vertical integration and contract growing of poultry and livestock, presented their findings and opinions in panel form. A high degree of interest in the subject was shown by several dozen written questions submitted from the audience.

How to Adjust Is Problem

Consensus among the delegates was pretty general recognition that integration is upon the industry and must be reckoned with, but confusion was equally general as to how each individual dealer should go about getting into integration or competing with it if his neighbor adopted it.

Dr. Mervin G. Smith, chairman, department of agricultural economics and rural sociology, OSU, said dealers face big challenges with the many problems of adjusting to vertical integration and told the audience the

(Turn to INTEGRATION, page 77)

Western Feed Assn. to Seek Revised Tonnage Tax Law

By GEORGE L. GATES
Editor of Feedstuffs

DES MOINES — Members of the Western Grain & Feed Assn. at their annual pre-Thanksgiving gathering at Hotel Ft. Des Moines transacted some important pieces of association business and listened to discussions of developments affecting their own businesses.

In a resolution passed the final day of the convention, held Nov. 24-25, the association made a move to seek revision of the Iowa feed tonnage tax law. The resolution states:

"Whereas the feed tonnage tax law as it now stands has proven outdated, unwieldy, and almost unworkable when applied to modern-day custom feed mixing operation and delivery of feed in bulk, be it resolved that the appropriate agencies of the Western Grain & Feed Assn. be directed to work with the Iowa Department of Agriculture and the legislative branches of the state government to bring about the enactment of a more equitable, just and workable statute."

In a talk at the convention, Clyde Spry, Iowa secretary of agriculture, made this comment: "In regard to custom feeds which, in order to give the purchasers some measure of protection which the feed law intended to offer them and to equalize the

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FEEDSTUFFS *Features This Week*

PELLETING: Experiments with pelleting semi-purified rations are discussed on **page 17.**

PRODUCTION: Summaries of the Small Mill Short Course and specialized session talks at the Feed Production School appear on **page 10.**

SWINE INTEGRATION: An economist reports on recent developments in contract hog production and special swine programs. **Page 26.**

FEED GRAINS: An article on the potential use of American feed grains in Europe appears on **page 24.**

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ADM Expands Feed Operation

MINNEAPOLIS—Expansion of the formula feed manufacturing operations and feed dealer organization of Archer-Daniels-Midland Co., Minneapolis, has been announced by Clyde C. Meinhoefer, assistant vice president and manager of the feed division.

Leasing of the feed production facilities of Ragland Mills, Inc., Goodman, Mo., will expand service to Archer Booster feed dealers and their customers in four southwestern states, Mr. Meinhoefer said. At the same time he disclosed that ADM has surpassed previous records in establishing new Archer Feed dealerships. Dealers added in July, August, September and October outnumber those for the entire previous 12 months.

The Ragland Mills production will be devoted exclusively to Archer Booster Feeds. A complete line of poultry, turkey, dairy and beef cattle, and hog feeds and concentrates will be produced. B. H. Ragland, Jr., president of Ragland Mills, will operate the plant. The Ragland family has been in the milling and feed industries for many years in south-

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Honest Appraisal

ONE OF THE MOST STRAIGHTFORWARD discussions of contract farming and agricultural integration we have had the opportunity to hear was presented at the Western Grain & Feed Association of Iowa convention this week by I. S. Riggs, Quaker Oats Co., vice president and board chairman of the American Feed Manufacturers Assn. With the feed industry often in a controversial position when such subjects are discussed, having these observations of the AFMA's chief executive on record can help make the industry's role in the changing farm picture much clearer to those who may have some fuzzy concepts of what is going on.

While Mr. Riggs' discussion covered integration in some detail, this was not his primary theme. Under the title, "Mrs. America—and the Feed Industry," he placed the integration subject in its proper perspective. That is, integration in agriculture is a result of changes in the farm economy and not the cause of them, and methods needed by farmers to meet the exacting requirements of food consumers frequently require the coordination of efforts by several segments of industry.

"As we look at changing patterns of retail distribution, we can see clearly why it is becoming more and more important to produce meat, milk and eggs for a market, and not just simply to market," Mr. Riggs pointed out. This, in few words, states the basis on which present changes in food production and distribution are predicated. On this basis, too, if methods are intelligently applied, a solution to the problem of farm surpluses eventually can be approached. Producing for a market means giving Mrs. America what she wants, or more of what she wants, at prevailing or lower prices. In turn, this calls for more production tailored to the buyers' specifications.

A NEW PAGE IS BEING INSERTED in the rule book of agricultural distribution, Mr. Riggs said. "If you read that page as I do, you will read that farmers of the future are going to produce more and more according to specifications, because they will want to seek out the kind of preferred market which will result in the most profitable return on their investment."

He continued: "Neither the farmer, nor the processor, nor the consumer ought to be afraid of terms such as 'producing to specifications,' 'vertical integration' and 'contract farming.' These are sometimes controversial phrases, and their meanings can be interpreted in many different ways. Production and marketing arrangements can vary, and no two agreements may read alike.

"You can't produce agricultural commodities to specifications without some sort of coordinated production and marketing agreement, and such arrangements ought not to be regarded as cuss words. The question, it seems to me, is just what sort of arrangements can best do the job? Mrs. America isn't concerned with those arrangements—only with the feed she gets. . . .

"I say, let's put an end to the sort of thinking which associates contract farming with slavery, dictatorship, restricted markets, thought control and all sorts of unpleasant things. Let's recognize instead that there can be good contracts and bad contracts—that any contract is an agreement entered into by two or more parties, each of whom stands to gain something in the bargain in exchange for his own contribution to the arrangement. If contract farming means greater efficiencies, lower costs, better quality and better profits for the farmer, then contract farming is well worth considering.

"The question becomes not whether contract farming is good or bad, but whether a specific contract is good or bad."

WHILE TOTAL QUANTITIES OF FOOD consumed per person do not vary much, more of this food can be made up of meat, milk and eggs if quality and price are right, Mr. Riggs believes. This view is shared by many others, and the feed industry's efforts have been largely geared to mesh with farm producers in order to bring about improved quality and reasonable prices. There is little doubt that these efforts will be continued through whatever means appear to be sound.

How the feed dealer and manufacturer fits into the arrangement-making picture also was described by Mr. Riggs. He pointed out that as the spark plug or innovator, the feed dealer's interest may only go to the point of bringing together the farmer and the food processor. "Perhaps the feed dealer's role might be compared to that of a preacher at a wedding. He is indispensable in getting things started, and he frequently keeps the happy couple in his congregation. But he very rarely goes along on the wedding trip. If the feed dealer or other innovator can help to integrate, he can also 'disintegrate.' Once the communication channels between the swine producer and the packer are established, once the production program is fitted into the marketing program, then the feed representative becomes simply a supplier of products and services."

Whether this is to be the pattern for feed men, or whether more complex arrangements will prevail in the future, it is certain that the industry will be performing an even more important role in helping farmers produce for a market than it is at present. However, it is necessary, as Mr. Riggs suggests, that the industry be realistic about its functions in relation to other elements in the food production chain. Through such understanding of itself the industry can better serve both producers and consumers of food.

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Good demand for formula feeds continued this week, although there were some reports of resistance to climbing ingredient prices and some concern indicated in broiler areas over the dropping broiler prices. Winter weather in parts of the nation stepped up demand for dairy rations, and the movement of cattle into Midwest feedlots has increased demand for this feed. Hog feed business is also good as hogs move inside and pig starter rations have good demand. The holiday trimmed running time for many mills, but left generally good backlogs for the coming week. The index number of wholesale feedstuff prices for the week was 85.1, compared to 83.1 a week earlier and 72 the same week in 1957. The feed grain index was 64, the same as the previous week and 1.6 points ahead of a year earlier. (Feed markets in detail on pages 78-80.)

Northwest

Return of winter weather this week brought with it stronger feed business. Cattle and dairy feed sales were particularly improved.

Cattle feed sales have been showing a good buildup since mid-November, when cattle began moving into feedlots in large numbers. The improved dairy and beef cattle sales, along with a good buildup of layer feeds and continued relatively good hog feed business have made the past week better than the previous week.

Representatives said November will end up well ahead of a year earlier. One mill representative said his mill is 20% ahead of last November, and he is looking for very heavy business in December. Another reported his mill 30% ahead of the same month a year earlier.

The good business has made extended shifts necessary. One mill is reporting three shifts.

Good business is expected to continue, representatives said, since it appears that most of the feed moving out appears to be for immediate needs rather than for building inventories.

An indication that the hog feed business also will continue good is the report of a good movement of pig starters.

Most mills apparently will hold their price lists at present levels through the week to come.

Southwest

The Thanksgiving holiday cut into running time of formula feed mills in the Southwest this week, but sales seemed to hold at about the same pace as in recent weeks. Over-all business is considered pretty good.

Cattle feeds are figuring more strongly into the feed volume with each passing day. More winter weather has contributed to this trend. Wheat pastures are not being grazed to any great extent because wheat plants are not rooted deeply enough. Dairy rations are also showing some improvement.

The cold weather has seemed to stimulate the movement of hog feed for some manufacturers. Hogs have been moved in off pasture and the already good volume of swine rations is improving.

Laying feed is moving well. There is little turkey feed business now. Broiler rations are moving in consistent volume, but this is relatively less than it was earlier because of placement cut-backs.

Mills ran four days, for the most part, although a few were down the day after Thanksgiving also, and some will run Saturday to get in a full week. Backlogs going into next week will be two to three days.

Price lists are expected to be mixed. Grains have weakened somewhat while other ingredients have held firm or strengthened. Prices on high grain items may be down 40¢ ton while other rations may be up as much as $1.

Northeast

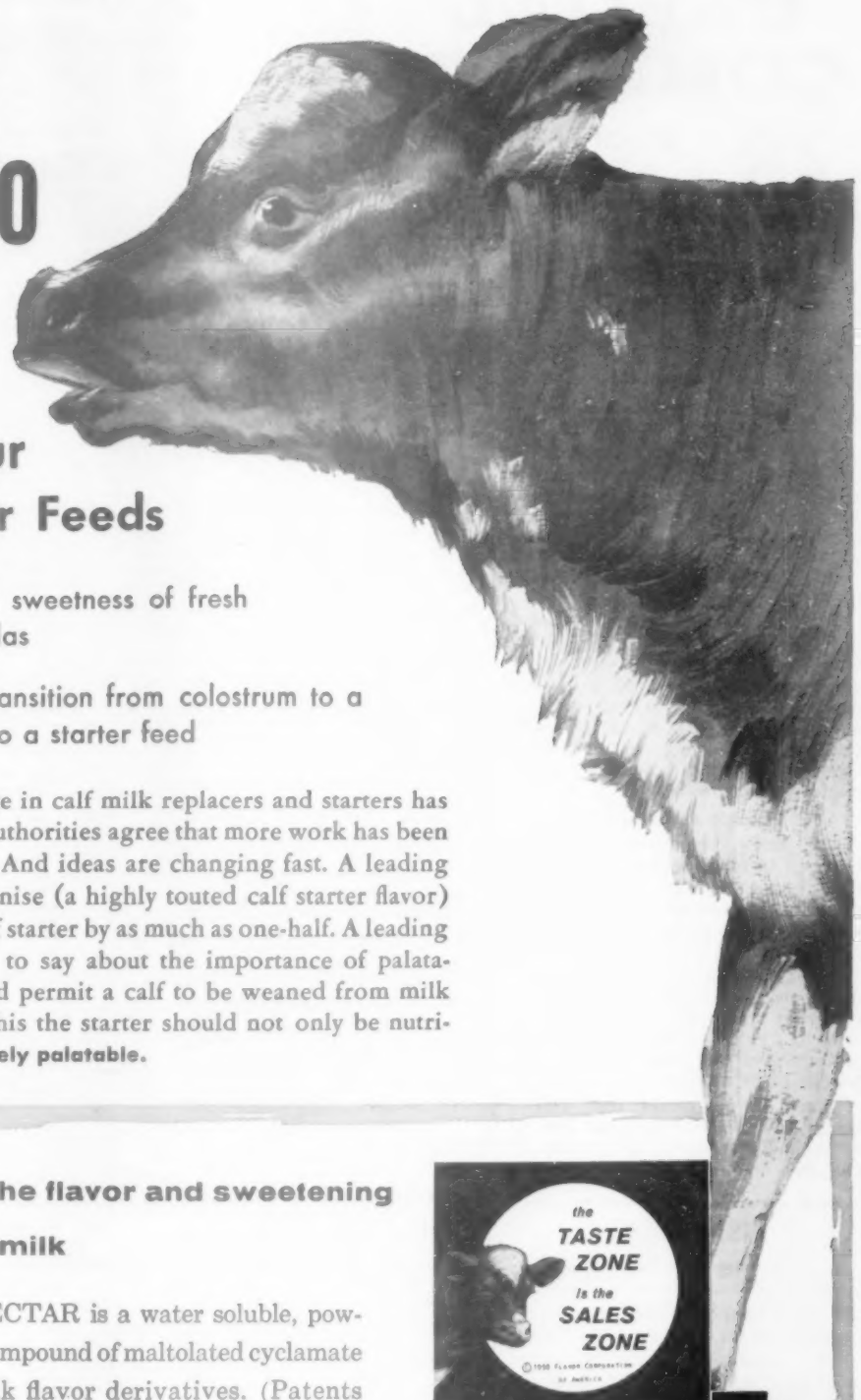
Formula feed manufacturers trimmed a full day from their running time as consumers backed away from climbing ingredient prices. Many consumers adopted a wait-and-see attitude and bought only their barest requirements. Some of the reluctance to buy was attributed to the sharp drop in the stock market.

Milk continues to be a bright spot among the end products. Egg prices, however, were off a little and the broiler outlook continues doleful.

Egg mashes, growing mashes and

(Turn to MARKETS, page 82)

Calves Have Less Reason to *Bawl*...



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CAPITAL COMMENT

BY JOHN CIPPERLY

WASHINGTON — Officials of the U.S. Department of Agriculture admit to being little short of staggered at the potential carryover of grains and oilseeds Oct. 31, 1959—reported as being in the magnitude of more than 4 billion bushels (Feedstuffs, Nov. 22). Such is the concern that some of them have expressed the opinion that when Congress sees the size of the problem, it may press for a Canadian-type management program for government-owned grain. That could mean the kiss of death for the commodity futures' markets of the nation.

This, of course, is an extreme view, but when budgetary requirements are considered, with all government agencies pressed to hold down disbursements, and a new Congress with no telling in which direction it will take off on a farm program, officials are merely stating a possibility which might become reality.

Possible Action Later

The action suggested might not come in the first session of the 86th Congress, but it is a move which might make political sense to the opposition as the nation moves towards the 1960 presidential election.

USDA officials are currently studying a proposal which it will take to Congress after Jan. 3, 1959. This is said to consist of recommended adjustments of the wheat, tobacco and peanut price support programs.

There is no secret that USDA would prefer to cut back the level of wheat price supports to between 50 and 55% of parity; to cut the cotton price support to as low as 20¢ lb., and corn to reflect about 60¢ bu. at the farm level.

There is talk that USDA is currently preparing a new wheat price support program. It is true that there is much activity—but most of this activity is designed to show the incoming Congress precisely what the farm program is costing the taxpayers.

Exports Not Helping

The big pile-up of surpluses is not being checked by the export stimulants of donations, International Cooperation Administration and Public Law 480 programs.

In fact, USDA officialdom is beginning to reflect the pessimism over PL 480 which has previously been expressed within congressional circles. All the world is on the farm production march, a march promoted in part by the high price support levels of U.S. programs which hold an umbrella over foreign producers.

The previous indication of the potential surplus position is an index of the grave fears within USDA that the accumulation of surpluses may mark the end of the useful and efficient marketing machinery of the commodity futures market, leading to a government monopoly over supplies. With this comes the tainted vision of the Commodity Credit Corp. as the central price stabilizer to replace the hedging facilities provided by the market.

FISH MEAL

(Continued from page 1)

the menhaden to show up in commercial waters at the regular times.

As a result, prices for menhaden meal have advanced to the range of $160@165 ton, basis coastal points. Imported meal also is not available in sufficient quantities to make up the difference as shortages have been reported in foreign waters and the demand for meal in Europe is equally as great.

Because of the cold weather, the processing of fish meal got off to a slow start this year. As the season progressed, conditions did not improve and the closing weeks of the season along the Atlantic Coast failed to make up for earlier reduced supplies. Some sources indicated October was very discouraging, bringing in supplies only 55 to 60% of normal.

The industry has entered the final phase of its operations off the Carolina coast. Sufficient boats are available in that area, and with open weather there may be a fair catch during the December-January period. However, according to trade sources, there appears to be little in the forecast which will tend to ease the present trend in price.

Warehouse supplies among the regular domestic processors are sharply reduced. Most are able only to satisfy regular customers on contracts made earlier in the year. Other interests must be satisfied by foreign imports and such inquiry began much earlier this year than in recent years. Hence, it appears that the tight situation will continue well into 1959.

USDA Reports Sharp Increase in Turkeys Tested for Pullorum

WASHINGTON — The upward trend predicted for turkey numbers next year was further indicated by a recent U.S. Department of Agriculture report on the number of turkeys tested in October for pullorum disease.

Testings of heavy white breeds totaled 104,499, a sharp 91% more than the number reported in the same month of 1957. Also up, but by the smaller margin of 7%, was the number of other heavy breeds tested. Their total for the month was 506,277.

Showing the sharpest increases for the month, however, were the numbers of light breeds tested. Their total was 74,070, an increase of 108%.

Also covered in the report were the cumulative totals since July 1. All breeds combined were up 29% for the four-month period.

The cumulative totals show an increase of 71% in heavy white breed testings, 124% for light breeds and 3% for other heavy breeds.

Chicken testings, meanwhile, in states for which comparisons are available, were up 15% during October in chickens for supplying broiler hatching eggs, and down 3% in egg-type chickens. The totals were 3,119,231 broiler-type chickens and 2,314,846 egg-type.

Cumulative totals for July through October are 8,987,892 chickens for supplying broiler hatching eggs, an increase of 13% over the same period of 1957, and the total egg-type testings were 4,658,669, about the same as in the July through October period of 1957.

Freight Cut Proposal Boosts Decatur Price For Soybean Oil Meal

Higher prices for soybean oil meal in recent weeks have been attributed to very good formula feed business and a proposed freight rate reduction, processors said, would lose some of their old margins in soybean meal sales.

Decatur-based prices for soybean meal have been increasing as a result of an on-again, off-again freight rate decrease sought by several railroads.

The carriers have asked for a 40% decrease in rates on oilseed meal and cake. A move designed to regain business lost to trucks, processors said. This created a problem for soybean meal crushers, however, because they said it would lose that part of their margin usually gained in freight rates. They had already filled their storage under old rates, they said, and were increasing meal prices to offset the anticipated losses.

A crusher said that the delivered price for the buyer would not be much different from what it is now.

Because of the losses likely to be sustained, soybean processors petitioned the Interstate Commerce Commission to hold up the effective date of the reduction, which had originally been set for Dec. 1.

The ICC on Nov. 25 announced that the reduction was suspended until July 1. The railroads in turn are reported to have appealed the suspension and an answer was expected from ICC sometime on Nov. 28. No decision had been announced by noon of that day.

Millfeed Prices

Millfeed prices, meanwhile, have had a sharp runup and are as much as $15 higher this week than they were a year ago. Sacked middlings were $43.50 in Minneapolis late this week, but were said to be easing while bran was reported firm at $42.

Processors said the primary reasons for the increase have been very good demand from feed manufacturers and rather light running time. They pointed out also that a year ago at this time millfeeds were under pressure from wet corn while corn this year is in good condition and is going into storage.

Late December millfeeds are being discounted, however, and a drop in the price is expected shortly, they said.

Steady to Lower Feed Grain Prices Seen

MANHATTAN, KANSAS—Steady to lower prices are expected for feed grains during December, according to agricultural economists at Kansas State College.

Increased consumption of feed grains is expected in the coming months as livestock production continues to increase following the favorable livestock-feed price ratios of the past year. However, production of feed this year has more than offset increased demand for feed so that large supplies continue to dominate the feed grain market. The number of grain-consuming livestock to be fed in 1958-59 is expected to be 6% higher than in 1957-58, while the total supply of feed grains and other concentrates is 10% larger.

Per acre yields of each of the four feed grains set new records again this year. Total carryover of feed grains is expected to be around 75 million tons at the end of the 1958-59 season. This is more than double average carryover in the 1952-56 period.

OREGON TURKEY EXHIBIT

McMINNVILLE, ORE.—The 17th annual Pacific Coast Turkey Exhibit will be presented Dec. 2-5 in the Armory here. The event will feature turkey exhibits and also a forum discussion.

BROILER PRICES AS LOW AS 13c

FAYETTEVILLE, ARK. — Broiler prices this week in southern areas were as low as 13¢ lb. at the farm, and there were some predictions that prices would go down to 10¢ lb. in some sections. The federal-state market news service here, on Nov. 25, reported Arkansas prices at 13-14¢. Reports for other areas on the same date included: Delmarva, 14-15¢; Georgia, 13-15¢, mostly 14¢; Texas, 15-16¢; Mississippi, 13-14½¢, mostly 14¢; Alabama, 14¢.

IMC Consolidates Phosphate Divisions

CHICAGO—International Minerals & Chemical Corp. announces it has put into effect a consolidation program which will streamline its organization and "effect greater efficiency of operation, improved customer service, and a stronger marketing position."

The move, announced by T. M. Ware, president, brings the phosphate chemicals and phosphate minerals divisions into a single phosphate unit and consolidates research and engineering into one staff division handling research, engineering and development.

George W. Moyers, with IMC since 1927 and a vice president since 1952, heads up the new phosphate division. Dr. I. Milton LeBaron, research vice president and an IMC employee since 1942, will direct the newly created staff unit. Howard F. Roderick, who has headed the phosphate chemical division since its organization in 1953, has resigned to become vice president and director of Miles Laboratories, Elkhart, Ind., and president of its new chemical division. William Bellano, formerly in charge of IMC's engineering division, was recently elected president of Gulf Sulphur Corp.

Mr. Ware said the reorganization centralizes responsibilities and planning in the operating and staff areas where such concentration is advisable.

Mr. Moyers said the phosphate consolidation would not affect the company's sales organization in the various markets. J. K. Westberg remains as sales manager for phosphate feed ingredients.

being substantially enlarged. Physical properties are in Clifton, N.J.; Zeeland, Mich., and Elkhart. Headquarters will be in Elkhart.

H. F. Roderick Heads Sumner Chemical Co.

ELKHART, IND.—Howard F. Roderick has been appointed president of the Sumner Chemical Co., division of Miles Laboratories, Inc., and elected a vice president of the parent company. The announcement was made by Walter R. Beardsley, president of Miles Laboratories.

Mr. Roderick formerly was vice president of the phosphate chemicals division of International Minerals & Chemical Corp. Earlier he was with Wyandotte Chemical Corp. He has a degree in chemical engineering from the University of Michigan.

The Sumner Chemical Co. division will be a newly formed combination of the present Sumner Chemical Co., manufacturer of fine organic chemicals; Takamine Laboratory division, manufacturer of industrial enzymes; and Miles citric acid operations, now

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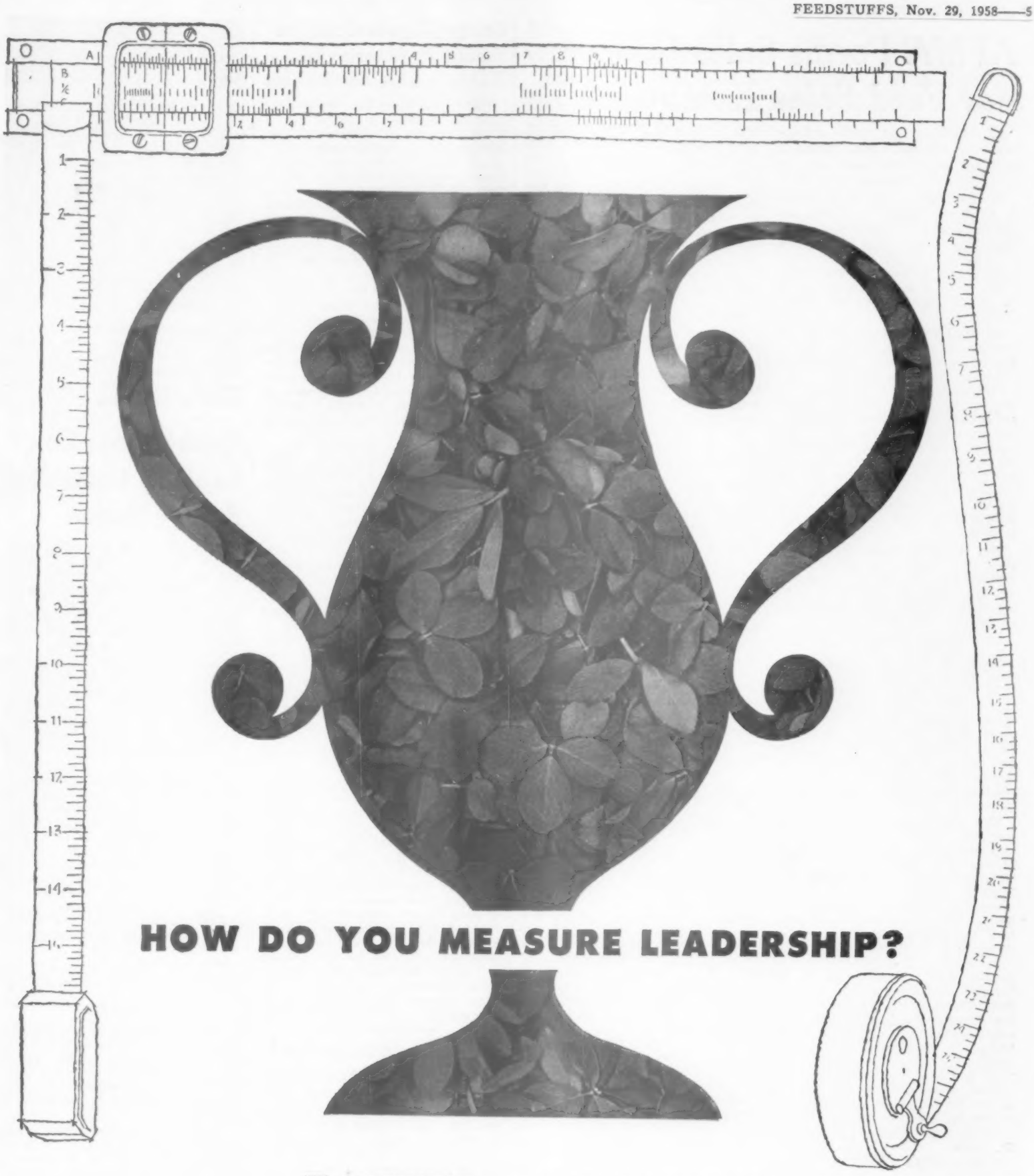

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AFMA Forms Sales Council For Feed Sales Executives

CHICAGO—A new service and organization for feed sales executives was announced this week by the American Feed Manufacturers Assn.

The chairman of the AFMA board, I. S. Riggs, Quaker Oats Co., described the new Sales Executives Council as "an important milestone in the history of AFMA" and "in keeping with the association's continuing effort to be of increasing service to its members and to the feed industry."

The first work undertaken by the council's executive committee has to do with business practices when feed is booked for future delivery.

Membership of the council will be limited to sales executives of AFMA active member companies who have the over-all responsibility for carrying out sales programs and policies for their respective firms. At least one meeting of the council will be held each year. Activities will be directed by an 18-man executive committee which will meet more frequently.

The 12-point organization plan, three main objectives, and 18 members of the first executive committee, were approved at a recent meeting of the AFMA board of directors, according to Mr. Riggs.

Executive Committee

Robert E. Miller, general sales manager, the Beacon Milling Co., Cayuga, N.Y., was selected as the first chairman of the executive committee. Robert D. Emmons, general sales manager, Wirthmore Feeds, Inc., Waltham, Mass., was elected vice chairman, and D. B. Kinkaid, general sales manager, Hales & Hunter Co., Chicago, secretary. All three were active in the formation of the council.

The other executive committee members are: G. A. Ensminger, Albers Milling Co., Los Angeles; Tom McGee, Jr., Superior Feed Mills, Oklahoma City; W. D. Moore, Jr., Southern States Cooperative, Richmond, Va.; Edward E. Reynolds, McMillen Feed Mills, Ft. Wayne, Ind.; L. F. Van Stone, Uncle Johnny Mills, Houston; E. D. Griffin, Allied Mills, Inc., Chicago; J. C. Huckabee, the Quaker Oats Co., Chicago; G. R. Peterson, the Pillsbury Co., Clinton, Iowa; David R. Ross, Nutrena Mills, Inc., Minneapolis; Darrell Runke, Supersweet Feeds, Minneapolis; R. W. Waite, Jr., Dannen Mills, Inc., St. Joseph, Mo.; Edward C. Aubrey, Aubrey & Co., Louisville, Ky.; H. B. Herron, General Mills, Inc., Minneapolis; Herman (Jack) Jensen, Golden Sun Milling Co., Estherville, Iowa; J. E. Streetman, Ralston Purina Co., St. Louis.

The executive committee held its first meeting in Chicago Nov. 18-19. They devoted eight hours of discussion to recommended changes in the 1948 Feed Merchandising Council plan. Principles included in this plan involve business practices when feed is booked for future delivery. The committee's recommended revision of the principles is being distributed to AFMA members for comments and will be presented for approval at the mid-winter meeting of the AFMA board.

Purposes of the council will be:

(1) To study policies, practices, problems and programs of the feed industry.

(2) To recommend definite courses of action to the AFMA board of directors on over-all sales problems of the industry.

(3) To develop and promote a better understanding among sales leaders in all segments of the feed industry.

Mr. Riggs stated that a preliminary survey of AFMA members in September indicated great interest in the formation of this group. Several hundred names of sales executives were submitted at that time to the AFMA office as likely members of the council should it be approved by the board. Another questionnaire is now being circulated among AFMA member companies soliciting additional names from companies which did not respond earlier.

Mr. Riggs commented: "The success of the projects and activities to be undertaken will depend primarily on the participation, support and cooperation of every council member. We sincerely urge every active AFMA member to have representation."

Robert E. Miller

Emergency Fund Drive Launched By PENB

CHICAGO — The Poultry & Egg National Board has initiated a year-end emergency fund drive directed toward the egg industry to bring 1958 financial support in line with the amount of money spent for egg promotion, according to L. N. Thompson, PENB president.

"Additional funds are needed also," he said, "to assist in carrying out egg promotion activities during the early part of 1959, until PENB's new investment program yields adequate financial support.

"The egg industry is in need of more promotion as we move into the first half of 1959, with more layers on farms than a year earlier. Egg production per bird and total egg production will be higher than in 1958. Population gains will offset much of the increased production, but more egg promotion activities will be needed to offset the lower egg prices the U.S. Department of Agriculture predicts for the early months of next year."

In implementing this 1958 wind-up fund drive, PENB released to the industry a "broadside" evidencing the results of its consumer promotion program work in one area. The flyer shows how newspapers carried the story of eggs to every state in the nation since Jan. 1, 1958. Each of PENB's promotions during the first 10 months is represented in the release. Also described in the PENB release are the various communication outlets which have served to promote use of eggs.

Opens Brokerage Office

DALLAS — Ralph C. Strader has opened new brokerage offices at 4922 Greenville Ave., Dallas, specializing in protein meals and other feed ingredients. Mr. Strader has been associated with the Strader-Hughes Co., Dallas, and previously with Van Waters & Rogers.

Study Dispels Concern About Resistance to Tetracycline Antibiotics

NEW YORK — The present-day practice of feeding low levels of broad-spectrum antibiotics continuously over prolonged periods to livestock and poultry has been given indirect encouragement in a report from the University of Missouri. This was noted by the American Cyanamid Co., New York, in citing a report by Dr. Herbert S. Goldberg of the Missouri department of microbiology at the Antibiotic Symposium held recently in Washington, D.C.

Dr. Goldberg told the scientists at at the meeting that findings by him and his associates would tend to dispel undue apprehension about some bacteria developing resistance to the broad spectrum tetracycline antibiotics. Drug resistance, which a germ sometimes develops as a result of exposure to small doses of a drug over a long period of time, is of concern to scientists.

According to Dr. Goldberg's report, Coliform bacteria (found principally in the intestines) do develop resistance to streptomycin, described as a narrow-spectrum antibiotic, but not to Aureomycin chlortetracycline. He said low-level, long-term feeding of streptomycin to mice resulted in bacterial strains which developed a high degree of resistance to the antibiotic.

All of the coliform organisms studied, it was reported, were inhibited by less than one half the amount of Aureomycin beyond which an organism is considered resistant. In tests with rabbits, the scientists also found that when Aureomycin was fed at low levels continuously, the amount which accumulated in the blood stayed at such a low level that resistance to the antibiotic by either normal or disease-causing bacteria was highly improbable.

A Cyanamid spokesman said: "The findings of Dr. Goldberg and his colleagues with coliform bacteria (which contribute to food spoilage and are strongly suspected of aggravating chronic respiratory disease of poultry) add to a long list of organisms shown to demonstrate no significant resistance to Aureomycin. Since many of them are the cause of major poultry and livestock diseases, the apparent inability of these bacteria to acquire a tolerance for this antibiotic enables the grower to enjoy the growth-promoting qualities of the drug without any sacrifice of its therapeutic value when it is needed."

Soybean Storage Lack In Memphis Area Cited

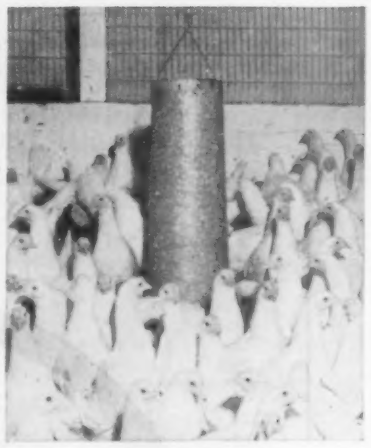
MEMPHIS—The acute need for additional soybean storage space in Memphis was pointed up by Arthur A. Williams, executive vice president of the Memphis Board of Trade, at a recent meeting of the Memphis Agricultural Club in the Hotel Chisca.

Mr. Williams said the indicated soybean crop as of Oct. 1 was 123,896,000 bu. for Alabama, Arkansas, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee. This compares with an average of 51,459,000 bu. between 1947 and 1956.

"These figures reflect an urgent need for more soybean storage in all these states, and particularly here," said Mr. Williams, "because the majority of soybeans in these states passes through Memphis for export."

"Our October soybean inspection receipts," he said, "were more than three times the receipts for October last year, when they amounted to 1,295 railroad cars. The receipts for the first 10 days in November have been 1,633 railroad cars."

Mr. Williams said that the Mid-South is developing into one of the largest grain and livestock areas in the nation. "The Memphis Board of Trade recognizes this expansion," he said, "and is glad to be a part of it."



CONTROLLED ENERGY—These 16-week-old pullets are being full-fed Quaker Oats' new Pullet Developer. This controlled energy ration, the company says, results in large, uniform birds at all ages.

Quaker Oats Co. Explains Controlled Energy Ration

LIBERTYVILLE, ILL.—The Quaker Oats Co.'s new "soup and salad" diet for replacement pullets—based on the restricted feeding principle but permitting full feeding — was described last week by company researchers at a press conference at the firm's research farm here.

Long an exponent of restricted feeding for growing pullets, Quaker Oats said that now, after four years of further research, a controlled energy ration has been developed that can be full fed "with the same good results obtained with restricted feeding."

The Quaker Oats scientists explained that the new program is an adaptation of the restricted feeding plan which was developed by the late Dr. O. B. Kent back in 1937. They said benefits of restriction in total feed intake have included larger eggs from the start, greater production and lower mortality. Under the new program, total energy intake is controlled rather than total feed intake. The program involves full feeding of a high fiber, lower energy ration.

The new controlled energy feed is called "Ful-O-Pep Pullet Developer."

Less Labor

This feed and the new feeding program, Quaker Oats officials said, will make management easier, reduce labor, eliminate any other minor objections to the restricted feeding plan and still produce a better pullet at low cost.

Trade press representatives at the conference were greeted by Dr. W. R. Graham, Jr., director of research, and details of the program and research behind it were outlined by Dr. H. W. Bruins, poultry research advisor, and Dr. L. A. Wilhelm, poultry feed research manager. In addition to formal presentations, the group was taken on guided tours, with assistance by Vern Cummings, project supervisor at the farm, and Tom McLaughlin, public relations department. I. S. Riggs, vice president of

(Turn to QUAKER OATS, page 82)

'59 Cornell Conference Set for Nov. 12-13

ITHACA, N.Y.—The 1959 Cornell Nutrition Conference has been scheduled for Nov. 12-13.

The conference—sponsored by Cornell University, Ithaca, and the American Feed Manufacturers Assn. —will again be held at the Hotel Statler in Buffalo.

The chairman of the 1959 event is Dr. F. W. Hill of Cornell's poultry husbandry department.

Eastern States Clears Way for Marketing Plan

WEST SPRINGFIELD, MASS.—A new and larger New England egg marketing program moved a step closer to reality when a special meeting of members of the Eastern States Farmers Exchange, Inc., voted approval of bylaw changes which clear the way for their cooperative to engage in marketing operations.

This action is one of a series of developments initiated early in 1958 by representatives of New England egg marketing cooperatives who proposed that their associations be consolidated with Eastern States, it was pointed out in an Eastern States announcement. Although originally chartered in 1918 for both cooperative purchasing and marketing services, Eastern States developed its operations only in the purchasing field and accordingly its by-laws were drafted to fit this limitation.

Eight out of a total of 10 local egg marketing cooperatives in New England are considering the proposed merger plan. Boards of directors and memberships of most of these eight cooperatives have already accepted in principle the plan for consolidation. Final decision to merge or not will be resolved in membership meetings of the co-ops involved.

Consolidation of the local co-ops with Eastern States, it is expected, would open the door to a broader egg market which demands both consistent volume and quality, according to the announcement.

Participating in the consolidation plans are these local co-ops: Brockton Cooperative Poultry Producers, Inc., Avon, Mass.; Connecticut Farmers Cooperative Assn., East Hartford, Conn.; Connecticut Poultry Producers, Inc., Hamden, Conn.; Eastern Connecticut Poultry Producers, Inc., Providence, R.I.; Hamden (Conn.) Cooperative Poultry Auction, Inc.; New Hampshire Egg Producers Cooperative, Derry, N.H.; Springfield (Mass.) Cooperative Auction Marketing Assn., and Willimantic (Conn.) Poultry Assn., Inc.

James Mfg. Co. Sold; Will Not Affect Name

FT. ATKINSON, WIS.—Transfer of ownership of the assets of the James Mfg. Co., Ft. Atkinson, Wis., to Jay A. Pritzker and Rockwood & Co. on Dec. 30, 1958, following a vote by stockholders to sell the company, will not affect either the name or the selling and research programs of the 52-year-old farm livestock and poultry equipment company.

E. R. Klassy, president of James Mfg. Co., recently stated that such names as "James," "Jamesway," "Power Choring," "Single-Stage," "Shuttle-Stroke," etc., will continue exactly as they are now.

In addition, he announced that Jamesway's plants will not be moved from Ft. Atkinson, Los Angeles, or Lancaster, Pa. He said it is more likely that certain expansions will take place to accommodate increased business activity.

C. A. Hanson, Jamesway's vice president and general sales manager, stated recently, "The James Mfg. Co. will continue to grow. The outstanding new products to be unveiled at our winter sales meeting alone should be proof enough that Jamesway is on the threshold of a dynamic burst forward in the field of developing time- and labor-saving equipment for the farmer."

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KANSAS CITY, MISSOURI

R. W. Fredrikson O. K. Fredrikson

Promotions Announced By Strong-Scott

MINNEAPOLIS—Three promotions in his company have been announced by L. S. Strong, president of The Strong-Scott Manufacturing Co., Minneapolis.

R. W. Fredrikson has been promoted to assistant general sales manager; O. K. Fredrikson has been promoted to sales manager of the grain processing equipment division, and A. J. Bury has been appointed assistant sales manager of the grain division.

A. J. Bury

R. W. Fredrikson was formerly grain division field sales manager of the firm. In his new position he will coordinate sales planning and market research for four divisions of Strong-Scott—contract, grain, industrial and pulverizer. Before joining the company in 1954 he was with E. I. duPont de Nemours & Co.

O. K. Fredrikson was contractor sales manager before his promotion. In his new post he will cover contractor sales engineers and sales representatives. He has been with the sales division of the firm for 13 years.

Mr. Bury has been with the company for 22 years in various capacities of sales and service.

According to Mr. Strong, these appointments will create a more efficient operation both from the company and the customer standpoints. "New markets are continually opening for both the grain and industrial processing divisions," he said, "and the necessity for closer coordinated market research and sales is needed to provide better service."

The company is completing its 63rd year as a manufacturer of grain processing and industrial processing equipment.

Placement of Broiler Supply Chicks Up 12%

WASHINGTON—The indicated placement of pullet chicks for broiler hatchery supply flocks by leading primary breeders of broiler replacement stock during October was up 12% more than the same month a year earlier, the U.S. Department of Agriculture reports.

Totals reported by USDA for October, 1958, were 2,568,000 chicks. Pullet chick placements by these breeders during the first 10 months of 1958 totaled 28,671,000, 32% more than during the same period of 1957.

These totals include pullet chicks sold during the month, plus the number of pullet chicks expected from eggs sold during the preceding month.

Primary breeders included in this report account for a very large percentage of the total supply of replacement pullets for broiler hatchery supply flocks, the report said. Sales of replacement pullets by these breeders provide an indication of the potential number of pullets available for addition to hatchery egg supply flocks several months before the pullets will actually move into the flocks.

John Strate Named Walsh Vice President

MINNEAPOLIS—John M. Strate has been named vice president of Walsh Grain Co., it was announced this week by M. R. Walsh, president, following the recent annual meeting of the grain merchandising firm.

At the same time, Ralph Dedrick was named secretary of the company.

Mr. Strate, who has been a grain merchandiser for Walsh Grain Co. for the past six years, previously was affiliated with the Minnesota Linseed Oil Co. Mr. Dedrick has been office manager since 1952.

Columbus Feed Club's Holiday Party Planned

COLUMBUS, OHIO—The Columbus Feed Club will hold its annual Holiday Party at The Everglades here on Dec. 5. The cocktail hour is to start at 6 p.m. with dinner commencing at 7:30.

According to Harry Shrode, a committee chairman, entertainment will include a hillbilly group and a magician.

Door prizes will be awarded, Mr. Shrode said, and the members' reservation cards will be used for the drawings.

John A. Ladd Dies

ST. LOUIS—John A. Ladd, 80, retired grain dealer and dentist, died recently of a heart attack at his home in University City. A 1904 graduate of the Marion Simms Dental Academy, he was a dentist for 10 years before joining his father-in-law, the late Jacob Schreiner, past president of the St. Louis Grain Exchange, in the Schreiner Grain Co. Surviving are his widow and a son, John Ladd, Jr.

Iowa Company Builds Feed Mill

BANCROFT, IOWA—Welp's Hatchery here has started construction of a new electronic feed mill to handle its commercial feed business for poultry, swine, cattle and sheep. The feed will be automatically mixed and the mill will have a capacity of 400 to 500 tons per 24-hour day.

The present plant has a capacity of 90 to 100 tons a day. The sale of Welp products is handled by 100 feed salesmen and 200 poultry salesmen. The feed operation was started by Welp's in 1940 to take care of its own feed needs, but branched out due to requests from its chick dealers, the announcement said. The hatchery which sells 4 million chicks a year, was started in 1929 by J. H. Welp, who still manages the company.

Iowa Bureau Favors Nonpartisan Board

DES MOINES — The Iowa Farm Bureau, at its closing session, favored a resolution which would call for a nonpartisan agricultural stabilization board to administer farm programs.

The group also went on record for the following resolutions: (1) Opposition to production payments again as "economically and politically unsound"; (2) that the administration should use recent market prices when determining farm price supports; (3) a recommendation to the American Farm Bureau Federation that a "positive program be devised immediately to reduce feed surpluses and prevent recurrence of feed production in excess of demand."

The group also officially favored the elimination of corn acreage allotments and increased funds for the soil bank conservation reserve.

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BOLTED OAT FLOUR
GLENWOOD FEEDING OAT MEAL
FALCON BRAND PULVERIZED WHITE OATS
STANDARD BRAND PULVERIZED WHITE OATS
DAIRY BRAND COARSE GROUND OATS
CRESCENT BRAND PULVERIZED OATS
CORN OATS PELLETS (Corn-Oats)
MIXERS' PULVERIZED OATS
MIXERS' COARSE GROUND WHITE OATS
MIXERS' PELLETED OATS
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WHITE HOUSE TURKEY—Ezra Taft Benson, secretary of agriculture (fifth from right), was on hand recently to accept on behalf of President Eisenhower a White Holland turkey, gift of the National Turkey Federation and the Poultry & Egg National Board. Shown (left to right) at the presentation are: Morris Smith, member of NTF and PENB, Ellicott City, Md.; Mrs. Smith; A. William Jasper, PENB, Chicago; Hermon I. Miller, U.S. Department of Agriculture; Mrs. Benson; Lloyd H. Geil, PENB; Mr. Benson; the Bensons' daughter, Cora Beth; Howard Kauffman, PENB, Waterman, Ill.; Mrs. Crafts and Peter C. Crafts, president of the NTF. After presenting the turkey for the Eisenhowers, Mr. Crafts presented a ready-to-cook turkey to the Bensons. The presentation, an annual tradition, took place in Washington, D.C.

Pfizer Will Sponsor Life-Cycle Swine Feeding Contest

NEW YORK — The agricultural division of Chas. Pfizer & Co., Inc., New York, has announced that it will offer trips abroad to winners in a nationwide hog feeding contest scheduled to begin early in 1959. The contest is part of a broad educational program centered around the benefits of life-cycle feeding of hogs, the company said.

Hugh O. Dermody, assistant general manager of the agricultural division, said every swine producer in the country will be encouraged to compete in the contest. The four best efforts in life-cycle feeding and management will be rewarded with an expense-paid trip to Europe.

"In line with rapid developments being made in nutritional research, we feel that the time has come to help close the existing gap between the scientific concept of life-cycle feeding and its present use by hog producers," Mr. Dermody explained. "Many farmers are at the crossroads in the swine business today. They are fully aware that in 1959, a year that may bring increased marketings and lower hog prices, it will be doubly important for them to increase their efficiency."

A Pfizer announcement explained that the new information program is meant to pinpoint for farmers specific feeding and management opportunities. This is aimed at cutting costs and increasing profits through close attention to the various stages in the life-cycle of swine.

Begins at Feed Stores

The life-cycle feeding contest will get under way Feb. 15 at local feed stores. Hog growers entering the contest will have an opportunity to apply the life-cycle concept to one segment of their operation. They will fill out entry blanks, giving the initial 40-day weight of one litter of pigs, plus pertinent feeding-management information.

On the basis of average daily gains, figured from final 140-day weights, Pfizer said that four top producers will be selected by a team of swine specialists from government and industry.

The winners, with their wives, will receive all-expenses-paid trips to Europe next fall by way of Scandinavian Airlines System. They will visit leading European cities as well as outstanding swine farm operations on the Continent, and return over the transpolar route to Los Angeles. Selection will be made by regions.

"Our new life-cycle feeding program will be keyed to the value of formula feeds fortified with Terramycin for supplying the balance of nutrients needed in each stage of hog production," Mr. Dermody said. The

(Turn to CONTEST, page 81)

Elevator Group in S. D. Will Meet

ABERDEEN, S.D. — South Dakota's governor-elect, Ralph Herseth, will appear as a speaker at the annual convention of the Farmers Elevator Assn. of South Dakota Dec. 1-2 in Huron, S.D.

A bulletin from the association secretary's office stated that the organization seeks to recognize the elected officials of the state through presentation on convention programs, and to thereby stimulate the interest of members in state and national public affairs.

The program Dec. 1 will include a panel discussion on grain storage and handling, and a talk on grain varieties by H. O. Putnam, Northwest Crop Improvement Assn. Mr. Herseth and other speakers will appear in the afternoon; a buffet dinner, entertainment and convention dance in the evening will fill out the first-day program.

On Dec. 2 the annual business session and election of officers will be held.

During the convention Donald S. Mitchell, state chemist, will be available to meet with any firms desiring information on the licensing, inspection and regulation of livestock feeds. The Public Utilities Commission will meet with members on any warehousing, transportation or scale inspection problems.

ICC Suspends Freight Cuts on Dressed Meat

PORTLAND, ORE.—Pacific Northwest meat and livestock interests were reported to be cheered recently by news that the proposed reductions of rail freight rates on dressed meats moving from the Midwest to the Pacific Coast have been suspended by the Interstate Commerce Commission.

Independent meat packers, livestock producers, the Portland Chamber of Commerce and others fighting the proposed cut point out that this suspension does not affect the reduced rates put into effect in August, 1957.

Sources close to the railroads explain that the rate cutting can be blamed on competition from the trucking industry.

To Erect Feed Mill

PRINEVILLE, ORE. — Ochoco Feed & Farm Supply, Prineville, has obtained a building permit for a feed manufacturing and storage plant to be constructed here. The two-building plant is to be erected by Larson & Baardson, Inc., Portland. The buildings will measure 40 by 40 ft. and 28 by 60 ft.

Officials Named for New Feed Division Launched by GTA

ST. PAUL, MINN. — Officials for GTA Feeds—new feed division of the Farmers Union Grain Terminal Assn. formed by the consolidation of the Farmers Union Grain & Supply, Williston, N.D., and the feed mill division of the McCabe Co., Minneapolis firm purchased by GTA in September —were announced in a recent issue of GTA Digest, publication of the cooperative.

The new GTA feed division is managed by J. V. Mayhall, former manager of McCabe's Star-Hi Feeds division for two years. Before joining McCabe, Mr. Mayhall had been manager of the Dover Milling Co., Ohio flour and feed firm.

Feed sales manager is R. M. Chambers, who formerly held the same position with the Farmers Union Grain & Supply. George K. Pierson, with Grain & Supply since 1944, is the new merchandise purchasing agent for the GTA feed division.

Merchandise sales manager is D. G. Wiltz, formerly sales manager of the McCabe feed division. W. J. Langley, Jr., is purchasing agent for feed following 13 years as purchasing agent for McCabe. The nutritionist is Darwin Brintzman, a former McCabe employee, and the seed procurement official is Art Linsky, formerly with Grain & Supply.

The publication said that a number of the key Grain & Supply officials will move to the St. Paul-Minneapolis area to work out of GTA's St. Paul office. Irving Severtsen, who has resigned as Grain & Supply general manager, will remain until the merger of GTA and Grain & Supply is completed.

The division was formed Oct. 1. It was launched with the consolidation of Grain & Supply and the feed mill division of the McCabe Co.

Grain & Supply, which voted to unite its facilities with GTA at its annual meeting Sept. 27, brings a gross business volume of almost $7 million to the new organization, the report said. The McCabe Co.'s feed sales volume was reported at about $5 million last year. Although Grain & Supply was a separate cooperative firm, it was governed by the same board of directors as GTA. Board members said they expect the union to speed up GTA expansion into the manufacture and distribution of feed, fertilizer and seed.

Co-ops Divide Feed, Fertilizer Businesses

ST. PAUL, MINN.—The feed and fertilizer businesses of the two biggest cooperatives of the Farmers Union group have been divided between themselves, it was announced this week.

Farmers Union Grain Terminal Assn. (GTA) and the Farmers Union Central Exchange (FUCE), both of St. Paul, announced the division Nov. 25.

The division follows GTA's recent purchase of the feed and elevator business of the McCabe Co., Minneapolis. GTA takes over distribution of all feed including that formerly handled by FUCE, and, at the same time, FUCE takes over the entire cooperative fertilizer distribution in the northwest area served by the two cooperatives.

The announcement was made at the Minnesota Farmers Union convention by Thomas H. Steichen, general manager of FUCE. It is reported to have cleared up speculation that the two would be competing against each other in the feed and fertilizer business.

Mr. Steichen cited FUCE as a "perfect example of farmers handling their own integration of farming operations through a cooperative."

Dr. J. H. Magilton — Dr. John Aiken

To Discuss Feed Man-Vet Cooperation at Midwest Conference

KANSAS CITY—Through the program and also through opportunities to get to know one another better, one of the aims of the upcoming Midwest Veterinary-Nutrition Conference will be to help improve cooperation between feed men and veterinarians.

Dr. R. E. Rebrassier

The conference will be held Dec. 8-9 at the President Hotel in Kansas City under the sponsorship of the Midwest Feed Manufacturers Assn. and the state veterinary medical associations of Iowa, Kansas, Missouri and Nebraska.

Experts from both industry and colleges will discuss various aspects of animal and poultry nutrition and health on the two-day program. (Feedstuffs, Nov. 22.) In addition, the program will include talks on relationships between feed men and veterinarians.

Commenting on the program, Dr. Chase Wilson of Consumers Cooperative Assn., Kansas City, conference chairman, said: "No one could read the program without being impressed by the stature of the speakers and the practical subjects they will discuss. The program will feature an array of top talent from both the nutrition and veterinary fields and will provide important information for both nutritionists and veterinarians."

Veterinarians to Speak

In the field of cooperation between feed men and veterinarians, one of the highlights will be an address at the annual banquet Dec. 8 by Dr. Russell E. Rebrassier, president of the American Veterinary Medical Assn. His topic will be "The Relation of the Veterinarian to Industry." Also, the subject "Working with Feed People" will be discussed at a Dec. 9 session by two veterinarian general practitioners, Dr. John Aiken, South Sioux City, Iowa, and Dr. James H. Magilton, David City, Neb. Preceding them, Dr. W. E. Poley, Zip Feed Mills, Sioux Falls, S.D., will speak on "Working with Veterinarians in the Field."

In addition to the talks, it was pointed out by Lloyd Larson of the Midwest association, the conference will give feed men "an exceptional opportunity to rub shoulders with vets and help improve working relationships between the two groups at the field level." He noted that early advance registration indicates a wide interest among veterinarians in the conference.

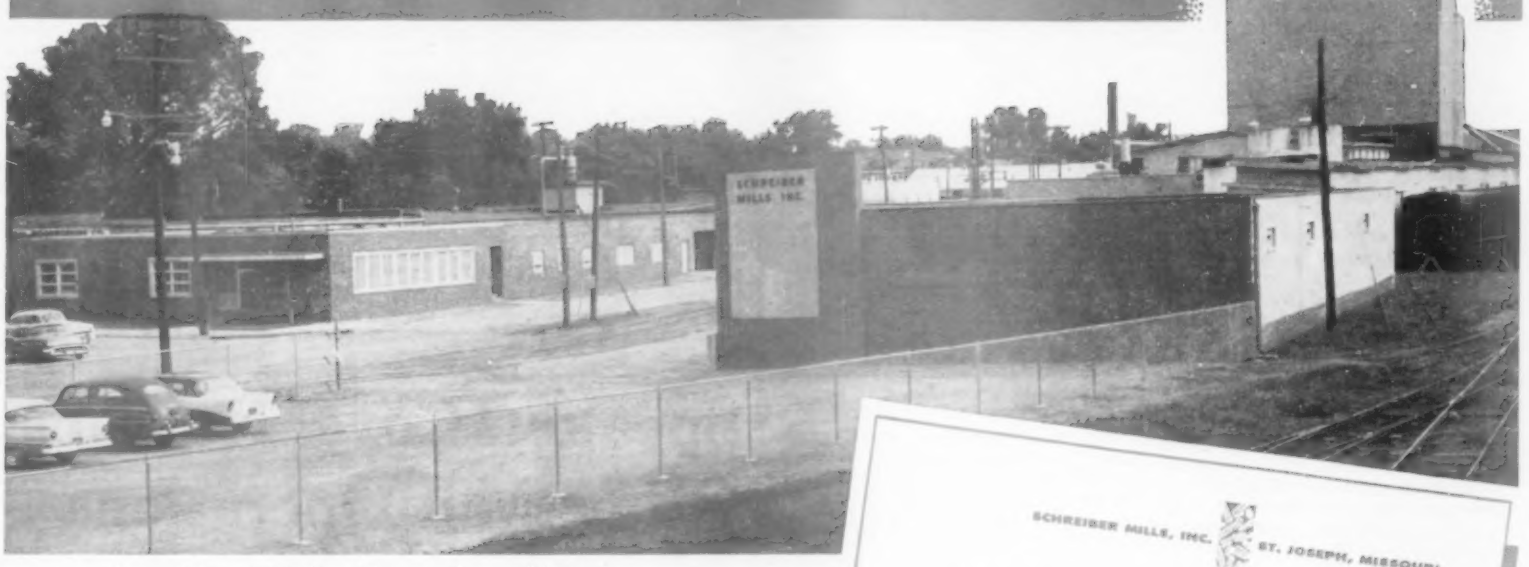
Registration is being handled in advance, by the Midwest association. The $10 registration fee also includes a complete transcript of the talks.

GENERAL MILLS DIVIDEND

MINNEAPOLIS—The board of directors of General Mills, Inc., Minneapolis, declared a quarterly dividend of $1.25 per share on General Mills 5% preferred stock payable Jan. 1, 1959, to stockholders of record Dec. 10, 1958. This is the 77th consecutive quarterly dividend on General Mills, Inc., 5% preferred stock.

JAY BEE

HAMMERMILLS . . .
33 YEARS CONTINUOUS SERVICE AND STILL GOING STRONG
at SCHREIBER MILLS, Inc., St. Joseph, Mo.



General view of Schreiber Mills' recently remodeled and expanded offices, warehouse, and milling facilities

Thirty-three years ago—in 1925—Schreiber Mills made this dramatic and conclusive comparison of a Jay Bee Model 4W 75 H.P. hammermill and three other well-known mills of comparable size and power:

The four mills were run side by side 24 hours a day for seven consecutive days, grinding the same kind of material on a 1/20th inch screen. **At the end of this test, the Jay Bee had ground 20% more than its nearest competitor! Furthermore, from start to finish, the Jay Bee's "textured grind" excelled that of the other mills in consistent coolness and uniformity.**

Schreiber Mills immediately bought four Jay Bee Model 4W 75 H.P. mills—**and these same Jay Bees are still operating today, along with the three other Jay Bee 4W's which Schreiber Mills bought later!**

Here is continuing and indisputable proof that a Jay Bee will outgrind and outlast any other hammermill made, conditions being equal—that Jay Bees are still the standard of comparison for high-volume, high-quality production, long life, and low-cost, trouble-free operation.

Jay Bee hammermills are available in a wide range of sizes and horsepower for any and every grinding job. What they have done for Schreiber Mills, they can do for you—all we ask is a chance to prove it!

SCHREIBER MILLS, INC. ST. JOSEPH, MISSOURI

J. B. Sedberry, Inc.
Tyler, Texas.
Franklin, Tenn.

Gentlemen:

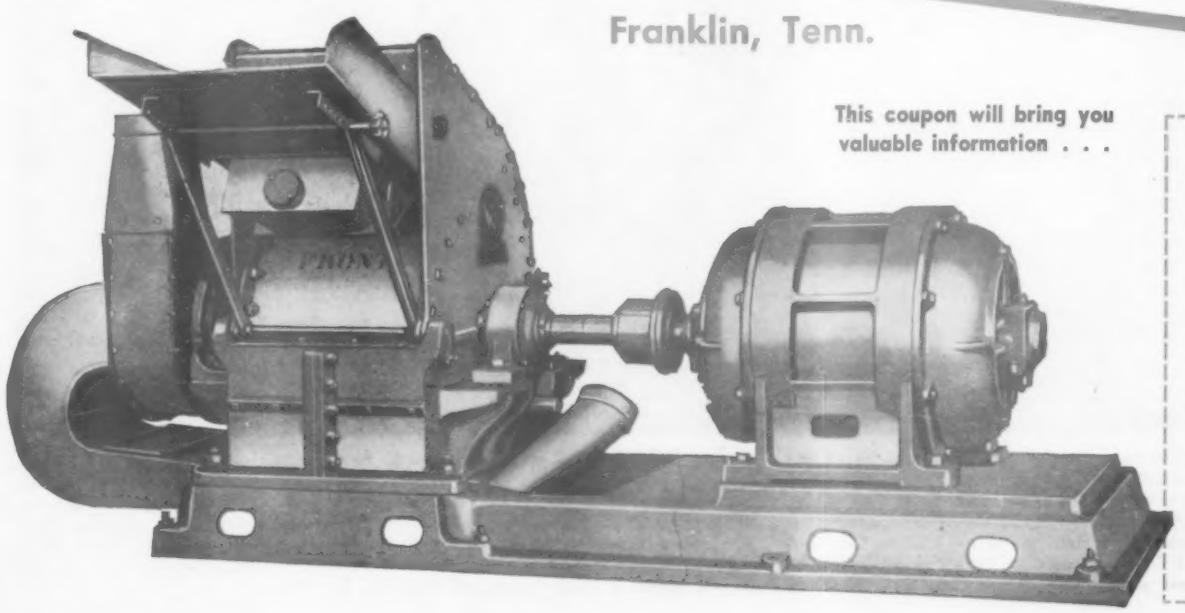
We wish to express our complete satisfaction with the performance of the four Jay Bee Model 4W 75 HP Hammermills which we bought 33 years ago and which have been in continuous operation ever since. We are equally satisfied with the performance of the three additional Jay Bee 4W's which we have installed.

In recent years these hammermills have been converted to 100 HP.

These seven Jay Bee Hammermills have given us top performance and are a vital factor in our process of manufacturing Sweet Lassy and Lassy Feeds.

Sincerely,
SCHREIBER MILLS, INC.
Allen Schreiber

J. B. SEDBERRY, Inc., Tyler, Texas
Franklin, Tenn.



This coupon will bring you valuable information . . .

J. B. Sedberry, Inc., Franklin, Tenn.
Please send me information about:

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Short Course Provides Small Mill Operators with Advice On All Phases of Milling

By THOMAS E. LETCH
and ROGER BERGLUND
Feedstuffs Staff

KANSAS CITY—Some of the principal trends in feed plant operations are a move toward smaller mills closer to feeders, more local milling and other services, more complex feeds, more pelleting, and increased volume in bulk. These and other aspects of mill operations received special attention at the Small Mill Short Course held in connection with the recent Feed Production School in Kansas City.

The short course, sponsored by the Midwest Feed Manufacturers Assn., was designed primarily for operators of custom mills, concentrate mills and other small plants. The one-day event attracted a large crowd of feed men from small local or area mills, but many of the feed men from medium size and larger feed manufacturing companies who were at the production school attended the short course sessions. This reflected their interest in finding ways to help their mill-operating dealers and also in learning new developments in small mill operations in view of the trend toward smaller plants.

The short course included talks and demonstrations by feed and allied company experts on these principal subjects:

- Receiving and preparation of ingredients.
- Mixing operations in custom and other small mills.
- Packing, storing and shipping finished feed.
- Specialties, including pelleting, housekeeping and maintenance.
- Typical layouts for custom and other small mills.
- What the customer expects from the feed mill.

Running throughout a number of the talks were predictions of rapid increases in production and use of complete pelleted rations, handled in bulk.

(A review of the bulk handling sessions at the main production school appeared in Feedstuffs Nov. 22. Summaries of specialized sessions will be found elsewhere on this page.)

Ted Stivers of the T. E. Stivers Co., Decatur, Ga., was chairman of the short course, and G. Arnold Carlson, Strong-Scott Mfg. Co., Minneapolis, was assistant chairman.

Following are summaries of the talks and discussions:

RECEIVING, STORAGE AND PREPARATION—An operator of a small feed mill and an equipment and design man handled this subject, one discussing it from the standpoint of mill operations and the other discussing machinery.

Receiving, Storage and Preparation in the Mill—Eldon Roddis, Roddis Feed Co., Rochester, Minn.: Equipment needed to handle grain is a large pit, fast leg, a 50-ton scale, grain drier and a complete testing station. Any new equipment should be designed to handle hopper cars and the new type bulk trucks.

Ear corn is one of the most difficult ingredients to handle. I believe that to write ear corn out of your formula rather than in, would be a wise move. Our molasses handling method is simple and inexpensive. It employs a cement tank under the building with a gravity unload method directly to the storage tank. This tank is unheated and has never given trouble in over 12 years of use.

In receiving bulk soy, alfalfa, meat scrap and other ingredients, it is hard to believe that any method of unloading can beat a railroad hopper car or a new type bulk truck. It is desirable to have a pit unloader under the track and a separate pit for unloading bulk trucks. A bucket elevator has never caused any trouble in unloading ingredients. The newer type truck trailers actually can be unloaded with less labor than a hopper car.

In handling bags, warehouse space is available and distances not too great, my first choice is the new type two-wheel pallet carts where you pile your feed on a single pallet. These can be used in unloading cars or taking feed away from the sacking unit with less labor than the fork lift pallet. There is less breakage of bags and they can be wheeled to the front of a truck for unloading. Where distances or space will not permit the two-wheel cart, a fork lift truck is useful.

Any bulk bin should have two straight sides with a large opening at the bottom. The bottoms should be tinned and all bottoms, including the corners, should maintain a 60° slope. The round metal tank with 60° side drawoff hopper has been used for meat scrap and tankage, with the tank outside in Minnesota weather, without trouble. With a known trouble material, a smaller capacity tank should be used.

Our tanks funnel into a hopper scale, and it takes little time to draw off materials to charge the mixer. We weigh grain in a hopper scale, then move it directly to the grinder, and then to the surge bin over the mixer. Because this method requires greater grinding capacity than when grinding to a bulk ingredient bin, a way was found to increase the capacity of a Jacobson 75 h.p. mill with a 25 h.p. blower. By installing an ammeter on the mill so that it could not become overloaded but would still op-

MAINTENANCE COST CONTROL—Control of maintenance costs was the subject under discussion by these feed production men in one of the specialized sessions at the production school. Left to right are Ralph D. Gray, Ralston Purina Co., Kansas City; Walter Stohrer, Allied Mills, Inc., Peoria, Ill.; J. D. Johnson, General Mills, Inc., Minneapolis, chairman, and Roland W. Nichols, Eastern States Farmers Exchange, Huron, Ohio.

Speakers Cover Pelleting, Other Mill Operations

By ROGER BERGLUND
and W. E. LINGREN
Feedstuffs Staff

KANSAS CITY — Continuing new developments and complexities in feed formulation and in feed distribution are bringing continuing changes and problems in feed production and handling. Discussions centered on a good many of these changes and problems in specialized sessions at the recent Feed Production School in Kansas City.

In addition to bulk handling talks and demonstrations (Feedstuffs, Nov. 22), the school, sponsored by the Midwest Feed Manufacturers Assn., included talks and discussions on some of the currently most lively topics among feed mill operators. More than 20 experts from feed and other companies handled the discussions in five specialized sessions:

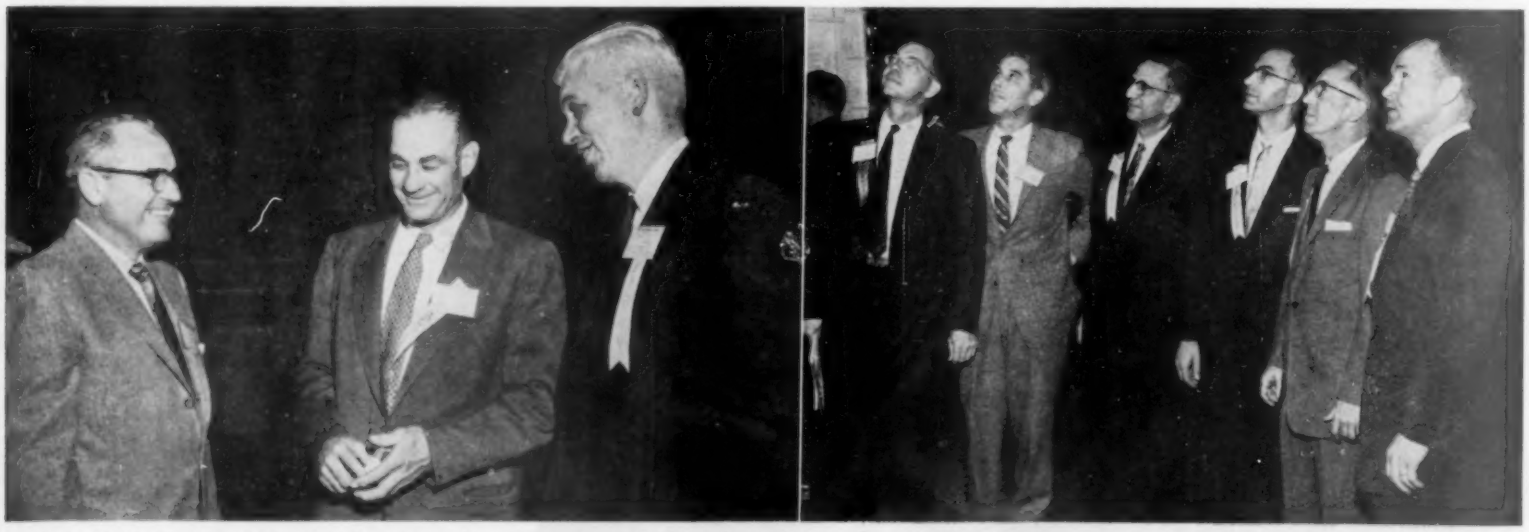
- Pelleting—including such things as pelleted hay rations, pellet mill operations, adding fat on pellets.
- Liquids—various systems of handling and mixing liquids in feeds.
- Micro-ingredients — premixing and mixing, purchased premixes vs. in-plant mixing, liquid additions of trace ingredients.
- Maintenance cost control—systems for good maintenance, with costs controlled.
- Mill remodeling — covering such things as finished feed storage, bulk handling and pelleting facilities.

Following are summaries of the talks and discussions:

PELLETING—Kenneth G. Sanderude of Wenger Mixer Mfg. Co., Sabetha, Kansas, was moderator of this session. He substituted for Oak B. Smith, Wenger Mixer Mfg. Co., Kansas City, the chairman, who was unable to be present.

Pelleting in the Country Feed Mill —Mr. Smith (parts of this paper were presented by Mr. Sanderude in the absence of Mr. Smith): There has been a substantial increase in pelleting in the country mill. Find-

(Turn to SESSIONS, page 16)



SMALL MILL SHORT COURSE—Several of the "faculty" members at the Small Mill Short Course are seen talking and looking things over. The short course, for small mill operators, was held as part of the 1958 Feed Production School. In the first picture, left to right, are J. W. Sloan, Cosby-Hodges Milling Co., Birmingham, Ala.; O. C. Swackhammer, Manley Farms, Tarkio, Mo., and Frank Allen, Archer-Daniels-Midland Co., Kansas City. In the second picture, looking over machinery demonstrated at the school, are Ted Stivers, T. E. Stivers Co., Decatur, Ga., short course chairman; Howard Johnson, Richardson Scale Co., Atlanta; Eldon Roddis, Roddis Feed Co., Rochester, Minn.; Duane Tyler, Reid-Strutt Co., Inc., Portland, Ore.; G. Arnold Carlson, Strong-Scott Mfg. Co., Minneapolis, and Robert Brunson, Pillsbury Co., Clinton, Iowa. Not present for the pictures were Wesley Lehman, McMillen Feed Mills, Decatur, Ind.; Tom Ibberson, T. E. Ibberson Co., Minneapolis, and Vernon Hayes, Hayes & Stolz Industrial Mfg. Co., Ft. Worth.

erate at full capacity, the mill now gets 18,000 lb. per hour grinding 80% corn and 20% oats over a ⅛ in. screen. This is considerably over the rated capacity but can be accomplished when not on a steady production run.

Receiving, Storage and Preparation Machinery—Duane Tyler, Reid-Strutt Co., Portland, Ore.: Receiving, methods of receiving into storage and preparation of raw materials are of the utmost importance in terms of efficiency and operational costs to all feed manufacturers.

In receiving, local conditions, consumption requirements and cost of labor vs. the investment should be considered. If materials are used in sufficient quantities or can be purchased advantageously price-wise, bulk is the only answer. In evaluating the wisdom of adding equipment, the original cost should not be the only consideration. The labor cost of poor facilities should also be weighed.

For receiving into storage, elevators are considered as standard for vertical lift. Quoted capacities for bucket elevators have caused confusion because certain factors not listed in the application tables also govern capacity. Design of cup, head, boot, feed inlet, spacing of cups and relief of air pressure should be considered along with types of cups, speeds and pulley diameters.

For horizontal conveying, augers are quite trouble-free, but should not be installed where service cannot be maintained. If mixture of products handled is detrimental, some other means should be used.

Drag conveyors are not considered primary units on the Pacific Coast but they are in other parts of the country.

Troughed belt conveyors are perhaps the most practical for volume horizontal conveying. They handle greater loads with less horsepower and longer life. They require more room and are more costly, but where capacity and/or clean-out is required, and if gravity pits to elevators are not possible, the added cost is worth it.

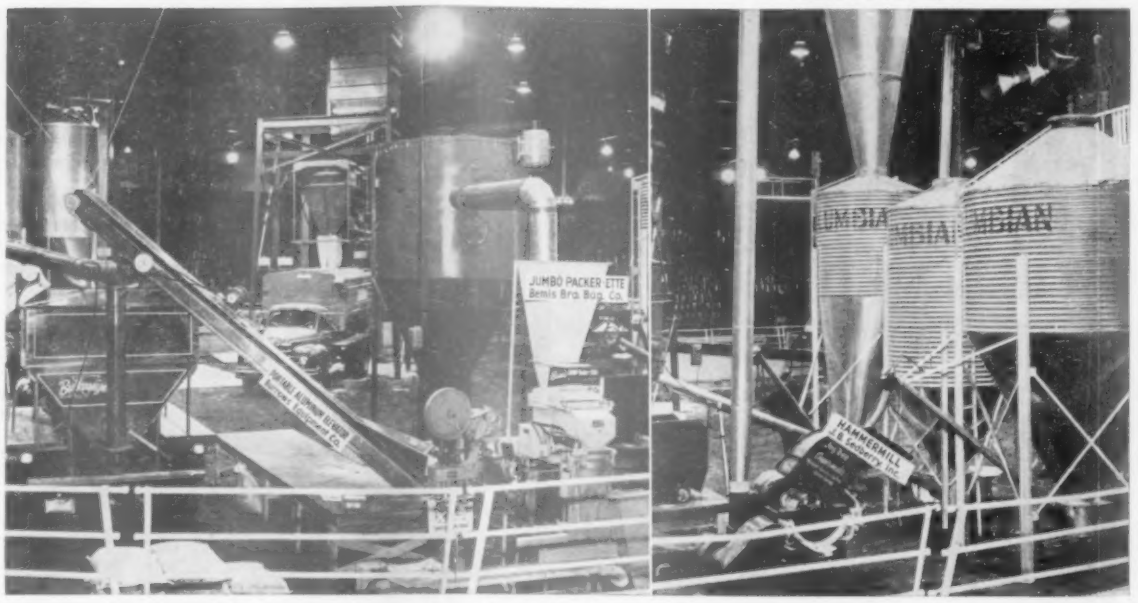
Air handling advantages are: (1) Will convey horizontally or vertically in one system for long distances. (2) No mixture of products. (3) Simple to install. (4) Can pick-up straight from truck and cars. (5) Eliminate construction cost of pits. Negative points are: (1) Greater power per ton for nominal length runs. (2) Higher equipment cost for short or medium length runs. Of the three types of systems—suction, pressure and a combination suction-pressure—the latter has proved most practical in some plants.

The grinder should be selected with care. The first step in grinding is to feed the mill evenly and continuously, by spouting from overhead bins through a feeder unit. Bin level controls save time and avoid operating interruption.

Factors in choosing a grinder include: (1) Principal materials to be ground. (2) Condition of material—friability, high or low moisture, light or heavy. (3) Type of grind. (4) Distance conveyed by air. (5) Capacity. For friable materials, most grinders will handle 200 to 250 lb. per horsepower hour, depending on size screen. Tough, fibrous material will handle at about 100 lb. per horsepower hour. Grinders may produce widely varied results on different commodities and under different conditions. Things like type of hammer and size of fan are important.

Of great importance is the type of grind desired. Determining factors, in addition to size of screen, are uniform feed, gradual reduction through proper flow of material through the mill, type of hammers, clearance between hammers and screen, screen area, peripheral top speed and air flow through the mill.

Any grinder with improper hammers, or hammers and screen in poor condition, may well be producing 20 to 50% less than its capable capacity but costing just as much per hour of operation.



TYPE 1 SMALL MILL—Different examples of small mill operations were shown in connection with the Small Mill Short Course at the Feed Production School. In these two pictures is the S-1, or Type 1, mill. Included in the facilities are Columbian steel tanks and augers for unloading tanks to mixing, J. B. Sedberry hammermill and fan and collector, Burrows vertical auger for loading steel tanks, Burrows weigh buggy for unloading from tanks and dumping into mixer, Riza Mfg. Co. vertical mixer, Bemis Jumbo Packer-ette, Burrows portable aluminum elevator for loading bulk truck, a North American Bulkanizer bulk truck.

In crimping, 9 to 12 in. rolls are considered standard. Capacities will be ¼ to ⅓ greater per inch of roll surface than from steam rolling. In steam rolling, factors to watch are: (1) Use large diameter rolls. (2) Dry steam at 80 to 90 lb. pressure. (3) Sufficient steaming chamber or tempering bins or conveyor for proper conditioning. (4) Adequate cooling and drying. Bins for the product must have at least 70° slope two sides only.

The first step in weighing to mixer is to provide overhead bins for ground grains direct from the grinder; also bins for heavily used soft ingredients. Once a mill has sufficient holding bins from 5 to 10 tons each, it becomes a matter of production requirements whether weigh buggies, hopper dial scales or automatic proportioning systems are used. With holding bins for ground grains and pre-mix concentrates, it is possible for two men to turn out 50 to 60 tons of bulk feed per day as against at least three or four men if sack cut-in system is used.

FEED MIXING — Mixing in the small mill was discussed by a machinery company engineer and a feed company's mill engineer.

Mixing in the Small Mill—Arnold Carlson, Strong-Scott Mfg. Co., Minneapolis: Dry feed mixing is probably the most important single operation in the mill. The vertical batch mixer is most widely used in the small mill. The horizontal ribbon-type blender is also very popular and has definite advantages.

Vertical single screw mixers require 20 minutes or more mixing time per batch to obtain the maximum mixing efficiency of this machine. Horizontal blenders will mix at peak efficiency in three to five minutes.

Mixing efficiency comparisons are difficult because of lack of available data for vertical mixers. Mixing efficiency has become increasingly important because of the many micro-ingredients. One of the largest feed manufacturers, with many dealers, is studying mixing efficiency of vertical mixers. They are checking such things as order of loading ingredients into mixer, loads in the mixer and mixing time. The advantages of loading concentrates into the top are also being noted.

Horizontal ribbon blenders have been shown by assay methods to give 99 plus per cent uniform distribution of micro-ingredients throughout the batch.

Single screw vertical mixers: (1) Have lower initial cost. (2) Require less horsepower for equal capacity. (3) Use less floor space than floor-mounted horizontals.

Advantages of horizontal ribbon blenders: (1) Can be ceiling mounted, requiring no floor space. (2) Can be ceiling mounted, over the driveway for bulk loading from mixer and extending through the wall over the work floor for bagging off; there is bottom discharge on each end and rotation of ribbon is reversed for discharge from either end. (3) With surge bins for discharge and ingredient hopper scales, 15 to 20 tons per hour is realistic with 2-ton mixer. (4) Hinged drop bottom doors can be furnished for cleaning internal ribbons and tub.

Continuous mixers in the small mill are generally used for liquid application. Liquid applications vary considerably, with the result that capacities of different feeds will vary from a given machine. The reason is that the dry feed bulk weights vary and different liquids and percentages change the capacity. Rules of thumb for capacities of liquid mixers include: High speed single rotor liquid mixers will deliver up to one ton of feed per horsepower per hour; slow speed twin rotor liquid mixers will deliver up to two tons per horsepower per hour; high speed liquid mixers with a feeder only are available as a compact unit for use in the mill or can be mounted over the driveway for bulk delivery of molasses feed.

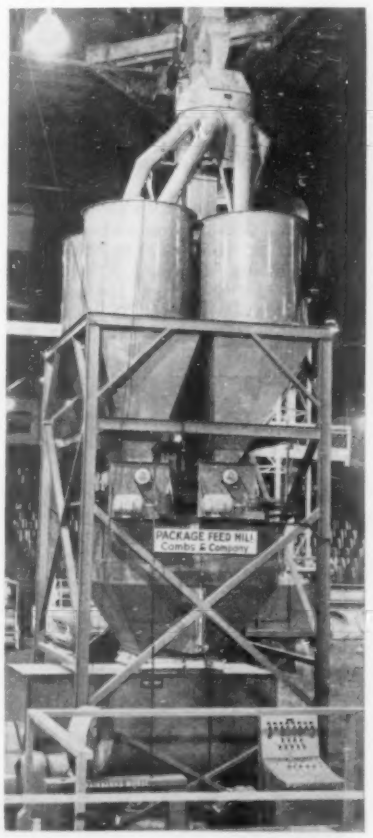
With a ribbon blender, no more than 10% molasses should be applied, and this much only when the mixer is properly equipped with special molasses manifolds, and when a systematic tub-cleaning program is followed.

Feed Mixing in the Small Custom Mill — Wesley H. Lehman, McMillen Feed Mills, Ft. Wayne, Ind.: The custom mill premix is quite different from the commercial premix. First, the custom mill is not equipped with premixing machines. Since the majority of custom mills are using vertical type mixers, it is important that they do the best job possible. In order to do a good premixing job in the vertical mixer, the mixer should be empty and running. The first step is to put in the concentrate and any other dry ingredients such as bran, middlings, meals or minerals. After one or so minutes, the ground grain or roughage can be added and mixing continued for 10 to 12 minutes. This should be ample. The short period of ingredient mixing can be defined as "premixing" in a custom mill. In a horizontal mixer, the premixing is not so necessary as the material moves more in a mass and mixing time is much shorter.

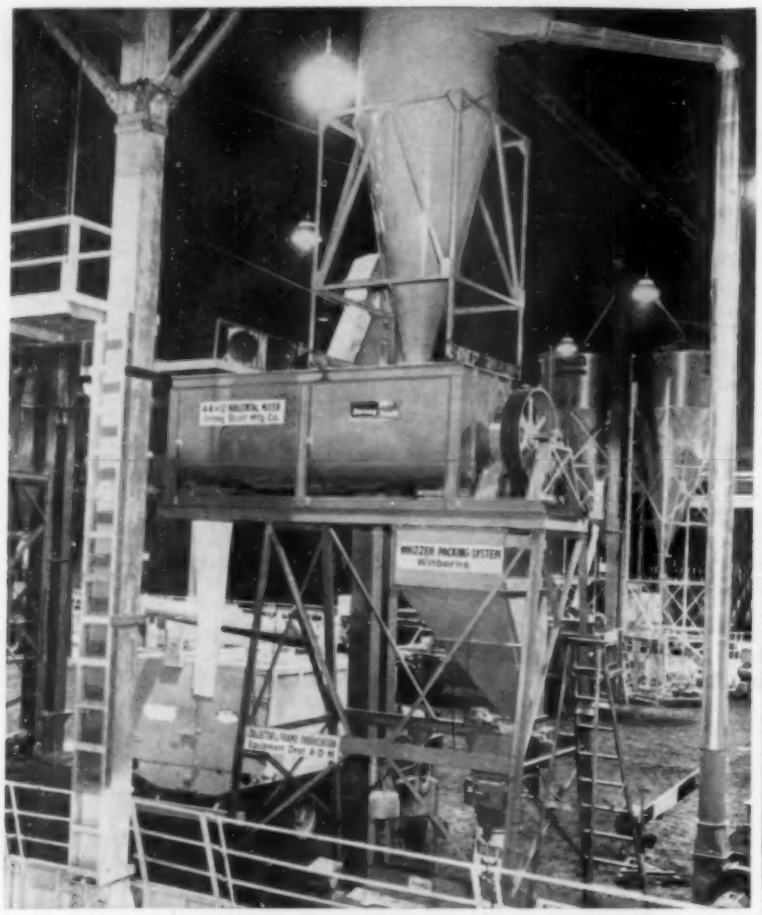
Quality control is very important in custom feed milling. It requires a different approach than in the commercial manufacturing plant. It is directed more toward checking quantities and toward proper formulation with various grains, keeping in mind the quality of the grain.

In vertical mixers there is a tendency to get segregation, especially on coarsely ground material or when pellets are to be added in a certain mix. Segregation is a little more prevalent in certain makes of large diameter mixers, where large particles have a tendency to roll to the center due to improper throw of vertical flight at the top end of the inside tube. Material on the outside of a vertical mixer moves faster than material close to the center, leaving coarse particles that have rolled to the center to come out last when feed is drawn off and bagged. This can be corrected to a large extent in your present mixer by using a baffle ring on top.

In checking a mix for proper blending in a vertical mixer, add iron oxide or carbon black in amounts of ½ to 1 lb. per ton. In discharging the



TYPE 2 SMALL MILL—Pictured here is the second example of a small mill operation shown at the short course. This is a Combs & Co. package feed mill, with a Fairbanks-Morse scale.



TYPE 3 SMALL MILL—Pictured here is the Type 3 installation in the small mill demonstrations. Included in the facilities are a Strong-Scott hammermill, Strong-Scott horizontal mixer, Universal bucket elevator, collector and frame fabrication by Archer-Daniels-Midland Co., Winborns Whizzer packing system including Richardson scale and Union Special sewing head, a Burrows auger simulating movement from pit to hammermill, a Henderson Chief bulk truck; also (not in picture) a Strong-Scott portable molasses blender. The mixer assembly is reversible for dischaging at either end, into the packing scale or through the canvas chute for bulk into a truck in driveway.

mixer, take samples at 10 intervals. Then make a visual comparison of the samples. If there is a noticeable difference in color, you will know that the mixing period must be longer.

If medicant is dribbled into the mixer at the bottom or top over a short period, rather than dumping it in one lump, you have more assurance of thorough mixing

In laying out a custom plant, it is a good policy to locate mixers away from inbound traffic. It is desirable to have the load-out area away from inbound traffic and yet be close to the mixers. Also, mixers should be close to concentrates and other ingredients.

When the new corn crop starts to come in, you may encounter trouble in vertical mixers by bridging or sticking on the inside. This occurs mostly in dairy feed and with new grain. Adding 100 or 200 lb. of a high moisture absorbent ingredient such as soya flakes, beet pulp or wheat bran flakes has proved successful.

PACKING, STORING AND SHIPPING—This subject was handled by a feed company engineer and a scale company representative, who covered bulk operations, bagging equipment and bulk weighing equipment.

Bulk Operations—Finished Feed — Robert B. Brunson, the Pillsbury Co., Clinton, Iowa: The economics of handling bulk finished feed will vary in different plants and will be influenced by locations. In determining the need for bulk handling, the potential should be thoroughly analyzed.

If physical facilities allow it, the least expensive initial investment would be to convey directly from mixer to waiting truck. In some instances existing conveying equipment can be utilized by the addition of a gate and spout directly to the truck. The complete job would seldom exceed $1,000. The efficient operation will depend on the exact scheduling of trucks and mixers. In a mill producing 3,000 tons of bulk a year, wasting one hour per day of manpower alone would easily increase costs by 10¢ per ton. The direct method of handling bulk should probably be looked upon as a temporary measure.

In order to handle any quantity of bulk feed practically, bin storage is a necessity. The plant can produce in the most economical quantity and in proper relation to scheduling. The most desirable method of utilizing bins is to erect the storage directly over the driveway in order to discharge into the truck by gravity flow or bin feeders. Round or square prefabricated bins are available. Round bins can be constructed of light weight materials and will have no valleys to aggravate the problem of bridging. Square bins use common sides and less space.

The design of the hopper is of uppermost importance. Crumblized and pelleted feeds will flow readily from bins of a minimum slope of 45 degrees. Mash feeds present a problem sometimes even with a 60° slope. A good design is for an off-center discharge, preferably with one vertical wall. Two adjacent vertical walls will further reduce the arching action of feed, and one side with a slight reverse taper helps prevent bridging. Round bottom bins with side discharges and adequate slope have proven effective.

Cost of installing bins overhead is about twice what it costs to put them at ground level, but on the ground there is the added cost of augers or conveyors to elevate the feed to the trucks. Operating cost, ease of handling and savings in man-hours generally justify the added initial cost of bins overhead.

A gravity opening is the cheapest. Most gates can be controlled by an inexpensive lever device for about $20, rack and pinion gates for about $50, or air operated cylinders for remote control for about $150, if air is available.

The use of the tote box in conjunction with fork lift trucks has proved to be a practical means of handling bulk feed. The major investment is the fork lift truck—about $5,000 new —which makes this means rather impractical for the small mill unless the fork lift is needed for sack warehousing. The tote box is a convenient method of handling small orders. One of the main advantages is that many different kinds of feed may be handled and stored with relative ease and much less cost than bins.

Scaling is an extremely important part of bulk handling. One system in the small mills is the accumulated ingredient weights of the material as it goes into the mixer. Another is the use of packing scales. In one of our mills we are able to spout directly from the packing scale to the bulk truck or to tote boxes. The platform truck scale is the most desirable and it may also be used for weighing of incoming ingredients. With tote boxes we frequently use the warehouse platform scale with beam or dial and a register.

For moving normal mash feeds we find the screw conveyor and inclined auger quite satisfactory. For handling dairy feeds where we are anxious to retain the identity of ingredients like crimped oats, we prefer the belt conveyor. We also prefer the belt conveyor for pellets and crumbles. The belt needs a scraper or brush to prevent carryover. There is available a drag conveyor contained in a screw conveyor box, and this conveyor will handle more than a screw of equivalent size with less power. It operates as a drag conveyor with rubber wipers. It is self-cleaning and is not as abusive to the feed as a screw conveyor.

Bagging Equipment and Bulk Weighing Equipment for the Small Custom Mill—Howard Johnson, Richardson Scale Co., Atlanta: The equipment selected to weigh and bag finished feed in the small mill depends upon the tonnage requirements, or number of bags of whatever size that must be turned out in a given time; the type or types of materials to be bagged; the headroom available for the installation; the amount of money available for the purchase of equipment, plus a few other factors.

Generally, equipment for the custom mill will be somewhat smaller in capacity than for a large mill; it wil require less headroom, be more flexible in the materials handled, may be of a portable type and perhaps lower in initial cost than the bagging equipment used in the large mills.

Bagging scales for the custom mill fall into two general categories: the gross bagger and the automatic net bagging scale. The gross bagging scale is the type on which the empty bag actually serves as the weigh hopper and is suspended on a filling spout that is connected to the scale beam.

The fully automatic bagger or "net" weighing scale is one in which the total weight is automatically accumu-

PROCEEDINGS AVAILABLE

KANSAS CITY—The complete proceedings of the 1958 Feed Production School are available, including both the main school and the Small Mill Short Course. The illustrated book containing the talks presented at the short course may be obtained for a price of $5 from the Midwest Feed Manufacturers Assn., 20 W. 9th St. Bldg., Kansas City 5, Mo. A 200 page illustrated book, copyrighted by the association, contains all of the material presented during the main part of the three-day school. This includes a report on field studies of bulk handling plus texts of talks and specialized session discussions. The price is $15.

REMODELING AND PELLETING—Two of the specialized sessions at the 1958 Feed Production School dealt with mill remodeling and with pelleting. Members of the two panels are pictured here. In the first photo, the men on the remodeling panel are, left to right, H. K. (Kim) Worthington, Allied Mills, Inc., Peoria, Ill.; John Heimovics, Jones-Hettelsater Construction Co., Kansas City, the chairman; John Branch, Nutrena Mills, Inc., Kansas City, and Edward Brackney of Jones-Hettelsater. The pelleting panel, in the second picture, included: Merle A. Williams, McMillen Feed Mills, Decatur, Ind.; Kenneth Sanderude, Wenger Mixer Manufacturing Co., Sabetha, Kansas, the chairman, and Jerold (Jerry) Vaughan, Honeggers' & Co., Inc., Fairbury, Ill.

"Our scientists are working with big new ideas in research and keeping Ful-O-Pep Feeds ahead of the field in nutritional strength,"

says **DR. W. R. GRAHAM, JR.,** *Director of Research of The Quaker Oats Company, in this report to Ful-O-Pep Feed Dealers.*

DR. W. R. GRAHAM, JR. received his Ph.D. in nutrition at the University of Toronto, Ontario, Canada. "Dick" joined The Quaker Oats Company in 1941 and was promoted to Director of Research in 1949.

"The chain reaction that set off the atomic bomb did more than impress modern man with a new source of power. The world became research conscious overnight.

"The Quaker Oats Company has been research conscious for several decades. The first of our research farms was started thirty-five years ago. Today, we operate two modern research farms, an ultra-modern laboratory, and several practical research units throughout the country.

"It is our job to formulate and produce modern Ful-O-Pep Feeds that will obtain maximum results at minimum costs. At one time, we could do this by trial and error research. Today, our research workers must study results obtained by scientists throughout the world to obtain the most recently developed principles underlying feed economy.

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LIQUIDS AND MICRO-INGREDIENTS—Two of the specialized session panels are shown in action at the Feed Production School. In the first photo are members of the panel on liquids handling and mixing. Left to right, Richard Lucas, Allied Mills, Inc., Peoria, Ill.; Will Brooks, Illinois Farm Supply Co., Springfield, Ill., and Robert Ambler, Ambler Milling Co., Inc., San Gabriel, Cal. Not shown was the chairman, Robert Wornick, Chas. Pfizer & Co., Inc., Terre Haute, Ind. In the second picture are men who discussed premixing and mixing of micro-ingredients. Left to right, Dr. Walter Glista, Wirthmore Feeds, Inc., Waltham, Mass.; Dr. W. J. Monson, The Borden Co., Elgin, Ill.; Harry Konen, Feed Consultant, Houston, Texas, and Max Cooley, Hoffman-Taff, Inc., Springfield, Mo., chairman. Not in the picture when it was taken was another panel member, James G. Pierce, Walnut Grove Products Co., Inc., Atlantic, Iowa.

lated in the scale weight hopper and then discharges "en masse" into the bag which has been placed on the filling spout.

The semi-automatic gross bagging scale machine will handle most any type of free flowing product into bags ranging in size from 50 to 140 lb. Bagging rates on a gross bagger depend upon the speed of the operator to a great degree, but in general, one man can bag and sew three to four 100-lb. bags per minute using this bagger.

The belt-fed gross bagging scale was designed to meet the need for a small low cost bagger to handle 50 and 100 lb. bags of cubes, molasses pellets and similar materials that do not tend to flow by gravity from a storage bin. The belt feeder above this gross bagger is automatically started when the catch gate is operated, and continues to run until the gate closes at the completion of the weighing. The use of this feeder makes good bagging accuracies possible. Three to four 100-lb. bags per minute for one man operation are average.

Gross bagging scales are low in cost, require very little headroom and are easily installed or moved. They are relatively slow in bagging speeds and accuracy may tend to vary because it is dependent on the operator.

The automatic bagging scale is normally used for weighing 50 to 100 lb. bags of free flowing products. It is capable of weighing six to eight 100-lb. bags per minute or eight to ten 50-lb. bags. There are mechanically operated automatic baggers and there are power operated baggers.

From the standpoint of the small custom feed mill, the power operated net bagging scale is higher in initial cost and does not lend itself too well to portable operation. There are a number of different automatic bagging scales on the market which use various means of power feeding.

Many of the small feed plants and bulk feed stations are concerned with bulk loading as well as bagging. The fully automatic net bagging scale offers one distinct advantage to the small mill in that the bagging scale can also be used, in some cases, as a bulk loading scale. This is accomplished by connecting the scale to the loading conveyor with some type of movable spout and then placing the scale in the automatic discharge position.

There are also special automatic bulk scales available which could not be used for bagging. These usually weight 500 lb. per discharge.

The use of the hopper type scale for weighing bulk feeds is quite common and equipment of this type is fairly inexpensive and offers the small plant a great deal of flexibility. The hopper scale can be supplied in different capacities, with various means of weight recording, and at the same time the unit can be made portable and it can be made to operate automatically.

SPECIALTIES—A category of the program called specialties included talks on pelleting in the small mill, dust collection and air handling, and housekeeping and maintenance.

Pelleting for the Small Feed Mill—Frank D. Allen, Equipment Department, Archer-Daniels-Midland Co., Kansas City: The cost of acquiring and installing pelleting equipment is not prohibitive. It does not take a pellet tonnage beyond the capabilities of most small mills to economically justify it. More important, as a consequence of the advantages of pelleting in handling and feeding, it is no longer a question as to how much it costs to get set up for pelleting, but of how soon the small mill can get equipped for pelleting in order to stay competitive and provide a service which customers require and will demand.

There are four basic types of pellet mills: (1) roller and ring die types, which account for most mills; (2) fixed die mill, with die mounted in horizontal plane; (3) a plunger, operating in a tube, to compress the feed, for making pellets or wafers from coarse forage; (4) a worm type screw forcing feed through a fixed die, used in making high-molasses pellets.

Some pellet mills do not employ mixer conditioners. The common method of conditioning is through use of live steam. (Mr. Allen listed advantages of steam and said "careful thought should be given to continuing or operating cost as well as initial cost prior to making a decision on type of mill to use." He also described cooling, crumblizing and grading operations.)

It is desirable to have a holding bin or bins over the pellet mill so that a uniform feed can be maintained into the mill. If this isn't feasible a screw or drag conveyor can be used, but this means careful timing on rate of flow. A run-around to accommodate excess feed above capacity of the mill at any given time can be provided, but this is normally more expensive.

A complete pelleting set-up can be installed for a cost of $8,500 to $30,000, depending on capacity and associated equipment, including a boiler if conditioning is to be provided. The $8,500 figure covers an operation without use of steam and without a cooler or grader. A complete pelleting system with a capacity on broiler mashes (used as a standard in considering capacity) of 2 to 3 tons per hour, requiring a 25 or 30 h.p. motor, including small boiler, pellet mill, cooler, grader, crumbles roll and elevating equipment, installed with necessary wiring, would cost $12,000 to $15,000.

A medium size installation, with a 40 to 50 h.p. motor, would have a capacity of 5 to 6 tons per hour; with properly sized associated equipment, it would cost $15,000 to $20,000 installed.

The larger 100 or 125 h.p. mill with proper auxiliary equipment can be installed for $25,000 to $30,000.

For a 2½ ton per hour installation costing $12,000 and pelleting 6 tons per day, depreciation and interest would be $1.23 per ton, and total operating cost (power, maintenance, labor) would be 78¢ per ton, for total pelleting cost of $2.01 per ton. With a $2 premium for pellets over mash, 6 tons per day for 260 operating days would be a breakeven point. If output went to 20 tons per day, there would be a $17 differential per day between actual cost of pelleting and revenue received. A 5 ton per hour unit would break even on production of 10 tons per day.

The most frequent error made by the small plant is consideration of only present requirements and failure to plan for bigger production. Often demand for pellets is doubled by three months after installation. A good rule of thumb is to figure at least four times the potential capacity in your pelleting installation that you may actually require today.

Dust Collection and Air Handling—Mr. Allen: It is important to have

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KEY TO CITY—A big man around Kansas City (both literally and figuratively) is the mayor, H. Roe Bartle. In the first picture, Mr. Bartle is honoring J. D. (Don) Johnson (left) of General Mills, Inc., Minneapolis, for his work as chairman of the 1958 Feed Production School. Mr. Bartle presented Mr. Johnson with a key to the city. In the second picture, Lloyd Larson, executive vice president of the Midwest Feed Manufacturers Assn., sponsor of the school, is calling for applause for the school committee, speakers, participating machinery firms and others who contributed to the program and the record attendance of some 900 feed men.

the dust collector sized properly so that it can effectively handle all the air passing through it. The long cone type collector has greater efficiency than the short cone and can improve dust collection markedly.

Vinyl plastic materials can be applied to wood or steel elevators and conveyors to plug dust leaks. Metal hoods over hoppers with a slight suction fan discharging into a collector can improve dust conditions at this point. Dust loss in hammermill operations can be minimized with a proper long cone collector. Where all dust must be eliminated, a cloth type filter should be used on the discharge of the cyclone.

Hammermill grinding of ingredients not too high in moisture lends itself to a closed circuit dust control system, where there is a return pipe from the hammermill collector to the air inlet on the hammermill.

Air conveying requires more horsepower than mechanical conveying, and initial cost is somewhat higher but maintenance is less. When it is imperative that no inter-contamination occur between one product and another, an air system is almost a must because it is self-cleaning.

To convey by air is practical and feasible and most desirable in many cases, but all facets of conveying problems should be considered.

Housekeeping, Fire Prevention, Smoking, Maintenance and Electrical Equipment — J. W. Sloan, Cosby-Hodges Milling Co., Birmingham, Ala.: Various suggestions were offered under this subject—Good housekeeping is a "must" even though non-productive; among other things it promotes order and cleanliness and eliminates many fire hazards. . . . If there is a machine choke-up, clean it up immediately. . . . Watch oil leaks. . . . If there is a dust problem, install necessary equipment to control it. . . . Have adequate fire insurance to protect your investment. . . . Prohibit smoking in the mill. . . . Watch equipment that is a fire hazard. . . . Keep fire-fighting equipment on hand and train workers how to respond in case of fire. . . . Set up a planned maintenance program; a simple check list is enough to be sure that each machine is periodically inspected for wear. Headings on the list can be: "Equipment," "When to Inspect," and "Inspection" (what to look for), plus space for "Remarks."

New equipment should be checked frequently the first few weeks. . . . Proper lubrication is very important. . . . When electrical equipment is installed properly and is under the Class II, Group G (Nema 9) classification, there is considerable savings in insurance rate. One method to keep capital expenditures as low as possible is to use Class II, Group G motors and Class II, Group G stop-and-start buttons in the most hazardous locations, with motor controls in a dust-tight, sealed room. With this room, we can use Nema 1 motor controls without any penalty.

TYPICAL MILL LAYOUTS—Experts from construction and equipment firms showed and discussed typical layouts for custom mills and other small feed plants.

Custom Mills — Tom Ibberson, T. E. Ibberson Co., Minneapolis: Bulk handling is here to stay; every mill must be geared for it. In designing a custom mill for bulk, source of supply and size of loads available are deciding factors. Provision should be made for bulk concentrates both in and out of the mill and for sufficient holding bins for bulk delivery. Driveway lengths should be gauged according to number of holding bins. . . . The efficient mill should have as much gravity flow as possible. . . . Each machine should be set independently so as to operate separately. Positive mechanical controls on feeders will increase efficiency. . . . For grinding, the 100 h.p. hammermill with a quick-change screen and a separate 40 h.p. blower with a crusher are popular. These are installed in the basement and fed through feeder screws with handle speed controls.

In mixing, the most popular machine is a 5-ton mixer with reversible ribbon. With this size it isn't necessary to split formulas. It is installed overhead with the discharge direct to trucks without re-elevating. For feeds going to the bin for bulk trucks or for custom mixing, the mixer is reversed; the flow is to the soft stock leg, bulk bins, mash bins and sacking bins. . . . The corn cracker for mixed feeds should be in the basement. Machines used for volume cracking, as for cattle feed, should be set separately. . . . Application of molasses through a manifold in the mixer for mixed feeds will give service up to 8% molasses. For up to 15%, a different type machine is needed. . . . Proper dust elimination should be provided. . . . Interiors of mills are lined with plywood and painted white, using a special varnish-base paint that resists dust. . . . Some average costs are $2,500 to $3,000 for an average leg, $14,000 for a complete hammermill installation, $8,150 for a 5-ton mixer overhead.

Production should be at least 50 tons a day in today's small mill.

Small Mill Operations — Vernon Hayes, Hayes & Stolz Industrial Mfg. Co., Ft. Worth: (Mr. Hayes outlined plans, equipment and costs for three types of small mills.)

Concentrate mill—16-20 tons per day, grain processed and added to concentrate to make finished feed; a simple plan, elevator, three tanks for concentrate, grain and ground grain, a small hammermill, vertical mixer. Machinery and storage tanks will cost $5,500; mill building, machinery installation and wiring will cost $5,000. Total, $10,500, not including warehouse space or land.

Custom mill—16-20 tons per day capacity; simple plan, including 100 h.p. hammermill, bins, 2-ton vertical mixer, elevator leg, distributors, molasses mixer, grain storage and other facilities. Machinery and related equipment in the plan shown represent an investment of about $15,000. The mill building erected, mill machinery bins and tanks installed with electrical wiring ready to operate is about $8,500. Total, $23,500, not including any warehouse space or land.

Small formula feed mill — four small ingredient working bins, 1-ton hopper scale, horizontal batch mixer, holding bins, elevator legs, molasses mixer, grain grinding and crimping equipment, distributors, conveying equipment, truck and rail unloading facilities, space for pelleting equipment later, two storage tanks and other facilities. The mill has a normal capacity, using a 1-ton horizontal mixer, of 30 to 40 tons per eight-hour day. Capital outlay for machinery, bins and grain tanks is about $37,500. Mill building with machinery installed and put in operation will be about $40,000. Total, $77,500, not including land, warehouse space or rolling stock.

It is wise to plan for expansion later, but in a plant such as those discussed, where there is an extreme minimum of capital involved, sometimes planning for future expansion can overbalance the acute necessity for economy in the beginning. I would suggest to anyone planning a small mill not to overemphasize the future expansion idea. It can be costly. Serious consideration should be given to future plans, but cost of machinery is such that there is a limit to expansion of a small plant. Beyond a reasonable point, it would be better to build a different plant altogether. The larger the initial plant, the less additional cost is involved in planning space for added tonnage and added diversification of processes.

WHAT THE CUSTOMER EXPECTS—O. C. Swackhammer, Manley Farms, Tarkio, Mo.: There is one thing that every feeder has in mind —that he is purchasing feed to be used to feed livestock with which to make a profit.

1. Adequate supply — There must be assurance that the feed desired will be available at all times.

2. Quality feed with uniform quality through the feeding period—The feed must produce a good rate of gain, with a conversion rate to result in the lowest possible cost of producing 100 lb. of beef or pork. Feed mills must be extra careful in use of some of the additives.

I think complete pelleted feeds for both hogs and cattle have a very bright future, for reasons of gain, conversion and labor saving. In three years, I believe, 90% of the hogs in the Corn Belt will get complete pelleted rations. In five years, most beef cattle will receive complete rations. Five years from now, 90% of all livestock feed will be complete pelleted rations, handled in bulk.

3. Service — With feeding more complex and the economics of marketing changing fast, service becomes even more important. You will have to expand your force of experts and take them into the field and do a lot of research under farm conditions. At present, not one hog producer in 10 really understands multiple farrowing. This is an example of service needs in the way of plans, financing, etc.

There is much room for more cooperation among the feed manufacturer, feeder and packer. Also, some persons believe that feed has much to do with the quality of beef produced.

HUMANICS AND AUTOMATION —Thomas H. Lawrence, Lawrence-Leiter & Co., Kansas City: (Mr. Leiter, senior partner in this firm of

Advertisement

Feed for Thought

By J. R. LINSNER

The Unlatched Door

You can pick up a copy of almost any popular poultry or feed magazine today and find at least one article on disease treatment. Very rarely, on the other hand, will you find an article concerning disease prevention. Aren't we taking good, sound management for granted? Aren't we letting the antibiotic-producing microorganisms or the chemists who synthesize our disease control drugs to carry on our sanitation program for us? Have we replaced disease prevention with disease correction in modern livestock and poultry production? Aren't we locking the barn door after the horse has been stolen?

Often we learn of poultry and swine producers who neglect to clean their watering equipment regularly. These units present excellent conditions for maintenance and development of disease organisms. Many of you visit swine and poultry operations in your daily work. At how many of these have you been able to walk right into the laying or broiler house or farrowing house without the operator's suggestion that you put on a pair of overshoes that could be disinfected to make certain you weren't bringing disease organisms from the swine or poultry operation you visited previously?

Cleaning up the broiler houses between batches is getting to be a lost art. There are few broiler producers that still do a thorough clean-up and disinfecting job between batches of birds. They rely on antibiotics to substitute for that labor. Swine producers have also replaced elbow grease with antibiotics and other drugs in their sanitation program.

Perhaps we are not being fair to our modern, balanced super rations when we penalize them with the added stress of disease—disease which could be held to a minimum by going back to the old reliable standards of cleanliness practiced before we came to rely on antibiotics to correct all our sins of omission.

Do not be misled. There is genuine need for antibiotics in growth promotion and disease control. Certainly we could not maintain modern production without other disease control drugs. We are, however, using them as a crutch instead of using them to augment a sound sanitation program.

Disease prevention instead of disease control should be our goal. We should latch the barn door before the horse is gone rather than take steps after its theft. Let us secure the unlatched door.

J. R. Linsner
DIRECTOR OF TECHNICAL SERVICE
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management consultants, conducted a special session to show how human behavior is influenced, how knowledge of the characteristics of an introvert, extrovert and ambivert can be used by a supervisor to do a better job in directing employees.)

QUESTIONS AND ANSWERS—The panel of short course speakers answered various questions from the audience. Comments and suggestions included these:

Pelleting is practical in a custom mill and can be economically handled. There is little doubt that pelleting by small mills will increase. . . . In operation of a grain bank by an elevator and custom mill, it is important to stay within state warehouse laws, try to maintain good quality of grain and do a good job.

Reasons of efficiency and volume are bringing more bulk, both on the farm and at the feed mill. Feed men as well as feeders will operate on lower margins and bigger volume.

SPECIALIZED SESSIONS

(Continued from page 10)

ings on the value of complete pelleted rations for cattle and sheep, based on hay, have been largely responsible for this, although use of more pellets for swine also has been important.

(Operations under discussion included local mills making a limited line of feeds, using concentrates or premixes supplied by others, and doing custom pelleting.)

(Mr. Smith went on to describe various phases of these operations, including the grain bank; the hay bank (where hay of various customers is deposited at the mill); grinding hay for pelleting; steam requirements; feed flow in the mill; handling pellets in bulk.)

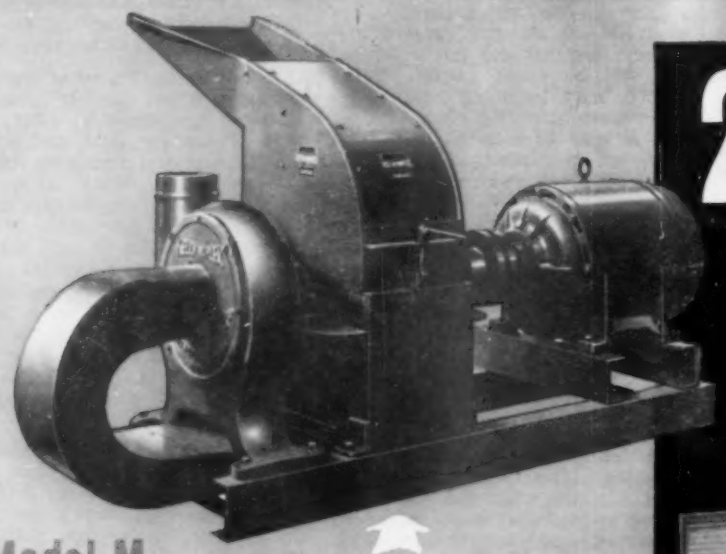
Pelleted ruminant rations appear to have an important future in the feed industry. For the concentrate producer and for the country mill, the tonnage can be most important.

Designing a Pellet Mill Flow—Jerold Vaughan, Honeggers' & Co., Inc., Fairbury, Ill.: Pellet mash bins should be large enough to hold no less than two complete mixer loads. Four bins above each pellet mill are to be desired; and at least two should be provided. There should be a minimum slope of 50° in each bin bottom. A complete and thorough scalping and magnetic separation system is important. Both vertical and horizontal coolers can be used with hard pellets; arguments can be given for each. We believe less fines are produced in a horizontal type. For high-molasses pellets, a horizontal cooler is required. To my knowledge, there is no good way to elevate hot pellets, and if possible, pellets should be cooled before being elevated. When using a screw type conveyor to move pellets, we have had best results with an oversize screw operated at a low r.p.m.

Some mills are feeding their liquids into their pellet mashes directly at the pellet mill. The liquids are pumped through a positive flow pump, through an accurate meter and into the tempering chamber. This gives a uniform blend, and eliminates the possibility of build-up in the system, and minimizes possibility of contaminating one batch of feed with another.

Pellet Mill Operations — Merle A. Williams, McMillen Feed Mills, Decatur, Ind.: The finer the grind of ingredients, the more water the feed will absorb; this means more steam can be used at the conditioner. The higher the fat level, the softer the pellet will be. Sometimes a thicker die or a die with a tapered hole will resist flow and produce a harder pellet. With a high fat level, fat is applied to the surface of the pellets. Sometimes, a high fat content causes the die to become pitted or corroded,

(Turn to SESSIONS, page 69)



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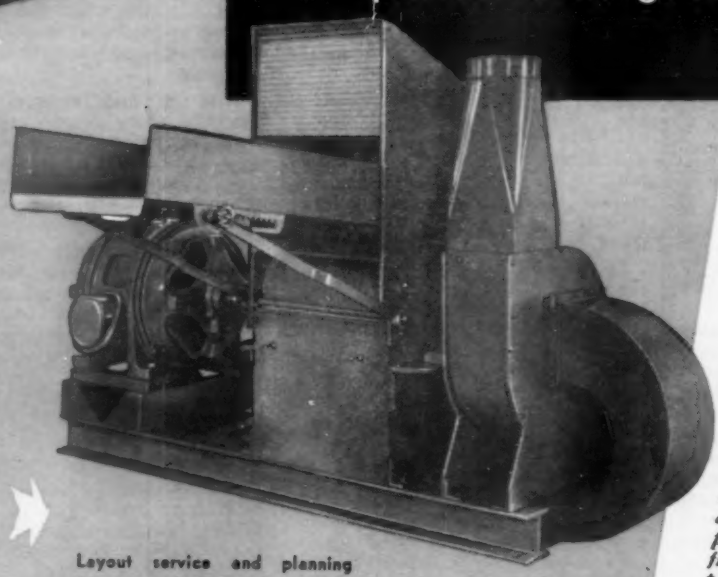

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The Pelleting and Acceptance of Semi-Purified Rations

Experimental rations were pelleted at the Kansas State College mill and then fed to lambs by Michigan and Missouri workers

By Dr. W. H. Hastings and Dr. William C. Ellis

EDITOR'S NOTE: Dr. W. H. Hastings is an associate professor in the department of flour and feed milling industries at Kansas State College, working in the feed technology research and teaching program. Dr. Ellis is assistant professor of animal husbandry at the University of Missouri.

The essential dietary nature of trace minerals, alfalfa ash and many other materials is best studied by adding them in micro amounts to basal experimental rations containing none of the test nutrient. It is necessary to formulate these test rations from purified or semi-purified ingredients, unvarying in composition. Mash-type semi-purified rations are often unacceptable to animals, due to physical properties, and feeding results cannot be compared with practical tests. Even when a mash-type ration is accepted, the exact composition of feed intake is questionable because of incomplete feed consumption of the dusty part of daily portions or selection of ingredients by the animal.

Recently Michigan State University and the experimental feed mill of Kansas State College undertook a cooperative project to study the process of pelleting semi-purified sheep rations. The rations were formulated to observe the effects of minerals on weight gains, and it was hoped that pelleting would overcome the difficulties of using a mash feed. The basal ration, shown in Table 1, was similar in proximate analysis to common rations composed of natural ingredients. However, due to the high content of purified cellulose (Solka-floc) as a fiber source, the bulk density of the soft feed was about 11 lb. per cubic foot as compared with a value of 30 generally attributed to feed mixtures. This meant that a great deal of compression was necessary to manufacture pellets. It was expected that the rations would prove more difficult to pellet than a diet containing natural ingredients.

Using a Master Model California pellet mill equipped with a 3/16 in. tapered die, which normally produced two tons poultry feed per hour, pelleting was attempted. Because danger from overheating of the soft feed was anticipated, steam intake was limited at the start to 0.4 turn on a Hancock steam-flo control valve. As the feeder was advanced to increase production rate, cold water spray was used to assist in lubrication. After about 200 lb. of feed was pelleted, the die became so hot that the material plasticized. The feed rate was reduced, steam and water turned off, and finally, with a sustained high ammeter reading beyond that safe for operation of the motor, the mill was shut off. Pellets which were formed in the hot die were translucent and hardened on cooling to such a degree that an animal could not eat them. Bulk density of pellets was 50 lb. per cubic foot. Before the pellet die could be used again, each hole had to be drilled out with a high-speed metal drill.

Die Changed

Various modifications of feeder setting, cold water and steam intake were tried, but continued production could not be attained. Except for pellets made while the die was relatively cool, none was suitable for feeding; 100 to 200 lb. of material passing through the die was sufficient to heat it beyond useful functioning. A die that would produce softer pellets with less heat from compression was clearly indicated. Therefore, a ¼ in. nontapered die, 1¾ in. thick, was procured. It was similar to equipment used successfully in pelleting dried skim milk.

The semi-purified ration was pelleted continuously with the ¼ in. die, and pellets were suitable in all respects for transportation and feeding. The production rate was increased by adjustment with cold water spray until 1,500 lb. per hour was pelleted. At this rate, most of the heat of compression was carried out of the die with pellets, and a small amount of steam was used to increase production to 2,000 lb. per hour. Cooled pellets tested 35 lb. per cubic foot, less than average for a good quality hard pellet.

Growing lambs were fed the pellets under the direction of Duane E. Ullrey of the department of animal husbandry, Michigan State University. Dr. Ullrey reported that the physical consistency was satisfactory for animal acceptance but that the rations were insufficiently digestible to promote substantial increases in weight.

Missouri Work

Animal nutritionists at the University of Missouri were also working at this time with semi-purified ingredients to study essential trace minerals in poor quality ruminant rations. A collaborative study was planned to truck material to Manhattan, Kansas, for mixing and processing. The initial formula was similar to that of Michigan State University. It had previously been prepared for feeding by wetting, autoclaving and drying in chunks. Using the ¼ in. die, continuous pellet production was maintained with the aid of water and some steam. Pellets were consumed by lambs as readily as autoclaved chunks. However, sufficient energy was not available from the ration to meet growth requirements. It was decided to modify the

TABLE 1. Basal Sheep Ration of Michigan State University Using Semi-Purified Ingredients

Ingredient	%
Purified wood cellulose	31
Corn sugar	10
Corn starch (adjustable with protein)	40-47
Corn oil	3
Drackett protein or urea	11-4
Mineral mix	5.0

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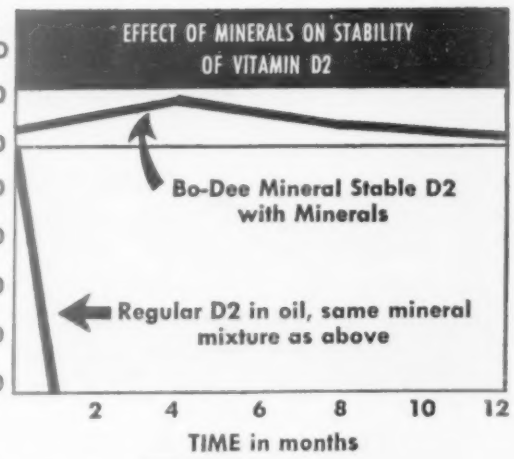
Note: MINERAL STABLE D2 fully present at the end of 12 months. Ordinary D2 practically gone in 30 days.

Ground Limestone	41.23%	Ferrous sulfate	0.50%
Steamed bonemeal	15.00	Copper sulfate	0.15
Tricalcium phosphate	13.00	Manganese sulfate	0.10
Magnesium sulfate	10.00	Cobalt sulfate	0.02
Iodized sodium chloride			20.00%



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DAFFIN MANUFACTURING COMPANY, 3270 NORTH PRINCE STREET, LANCASTER, PENNSYLVANIA

TABLE 2. Semi-Purified Rations 710, 711 and 810 Used by the University of Missouri

Ingredient	710	711	810
	——Per cent——		
Solka-floc (wood pulp)	39.4	20.0	10.0
Beet pulp	...	22.0	60.0
Corn starch	27.0	24.0	10.0
Corn sugar	14.0	14.0	3.7
Lard	2.0	2.0	3.0
Casein	12.0	12.0	6.0
Mineral mix	5.0	5.0	3.8
Promine	...	...	3.0
Dry vitamin A & D suppl.	0.4	0.4	0.3
Chromic oxide*	2.0	0.6	0.2

TABLE 3. Performance of Lambs Fed Rations 711 and 810

	711	810
No. of lambs used	16	39
Days on feed	89	56
Average initial weight, lb.	64.9	65.9
Average final weight, lb.	82.3	88.6
Average gain in weight, lb.	17.4	22.7
Average daily gain, lb./day.	.196	0.405
Average daily feed intake, lb./day	1.69	2.3
Pounds of feed per lb. gain	8.62	5.67

formula by replacing some purified wood pulp with dried beet pulp in an effort to improve pellet quality and at the same time achieve normal livestock growth.

This modified formula, given a Code No. 711, could not be formed into a hard pellet in the ¼ in. die. When a standard 3/16 in. tapered die was used, good quality pellets were produced, acceptable to animals in Columbia, Mo. Less than normal growth was obtained with this ration, and therefore the formula was further modified to contain 60% beet pulp and 10% wood pulp (Code No. 810). This was pelleted with standard dies at the production rate of half the optimum for the mill. Typical data for pelleting ration No. 810 are: steam flow valve open 1.3 turns, feeder setting 27, and steam gauge pressure 50 psi. From previous calibrations, these figures can be expressed as a production rate of 2,000 lb. per hour and water added as steam, 120 lb. per hour. Pellets after cooling, using a Stokes hardness tester recording in kgms., shattered at 11 immediately after cooling and at 20 after a month's storage. Bulk density of soft feed was 18 lb. per cubic foot and bulk density of pellets was 41. University of Missouri semi-purified formulas are shown in Table 2.

Lamb Feeding Results

Southwestern, crossbred lambs were fed ration No. 810 twice daily in individual feeding stalls with feed limited to the lamb that ate the smallest quantity. The most notable result was the very efficient feed conversion obtained as shown in Table 3. Daily gains nearly matched those of lambs on a good practical ration.

Other rations were pelleted containing 60% dried corn cobs or cottonseed hulls ground through a ⅜ in. hammer mill screen, with either corn starch or ground corn supplying nitrogen free extract. Bulk density of the soft feed was about 18, the same as ground dehydrated alfalfa, and the resulting pellets tested 41 to 43 lb. per cubic foot. Calculated pounds per square inch pressure required to pellet ration No. 810 were slightly over 10,000. This figure was very close to the compression required to pellet all rations containing 60% roughage, and is higher than calculated for low-roughage feeds. When more animal fat was added to these rations (for example 6% lard included in rations for Code No. 712 series), pellets were produced at a maximum volume of material flow through the mill and considerably less compression.

Summary

General results of tests completed to date can be summarized as follows: All pelleted rations were acceptable to animals. Weight gains with 60% beet pulp diets were almost equal to standard gains on commercial feeds. Corn cob and cottonseed hull rations permitted slight growth. Purified wood pulp rations maintained body weight but did not allow weight gains.

High-roughage rations containing 5% lard or corn oil softened in storage and became crumblized on handling. Low-fat rations showed a greater hardness on storage than when manufactured.

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A Ready-To-Eat
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— 25% PROTEIN —
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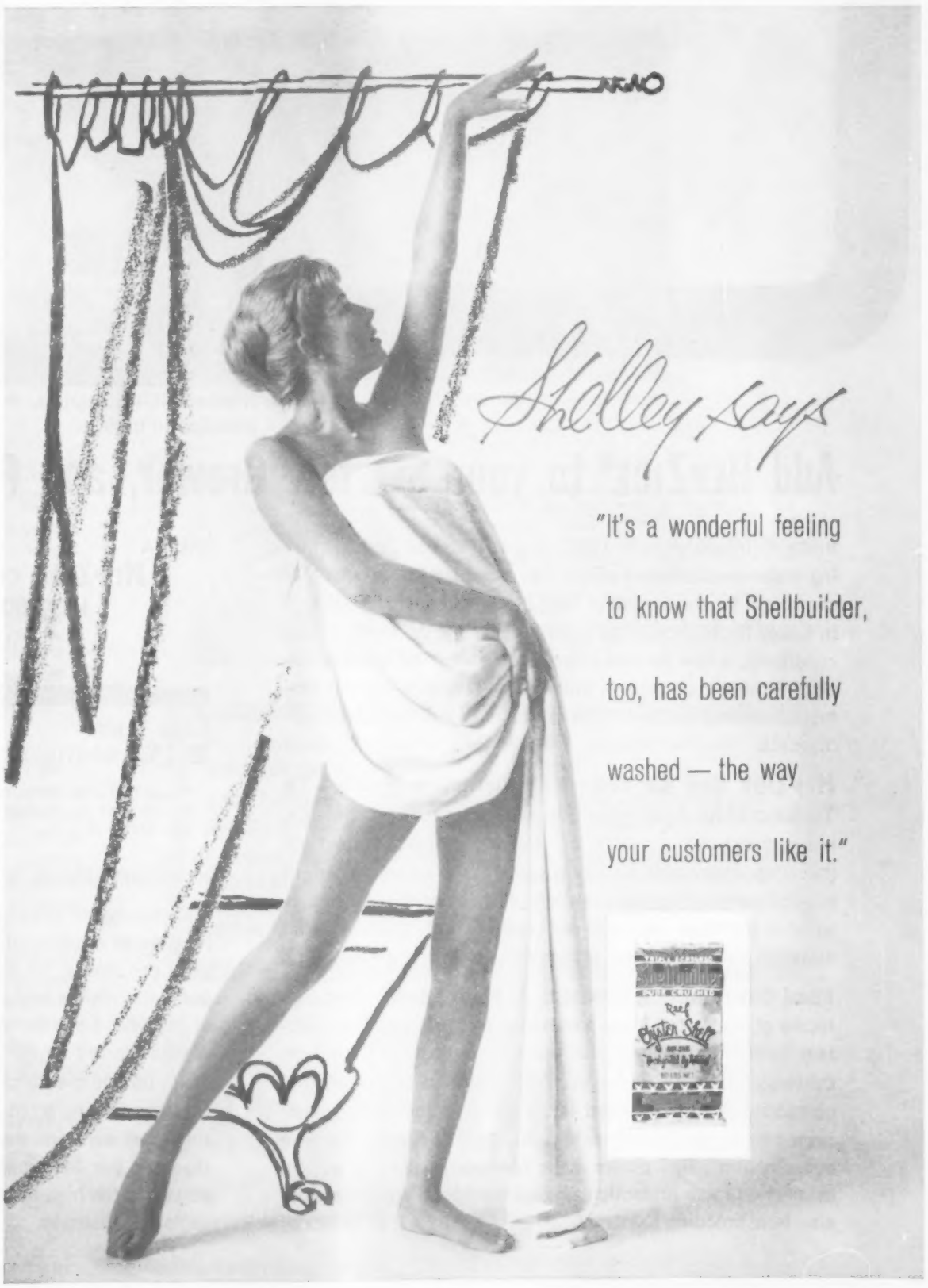
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CONTINUOUS HIGH-POTE

BLACKHEAD and

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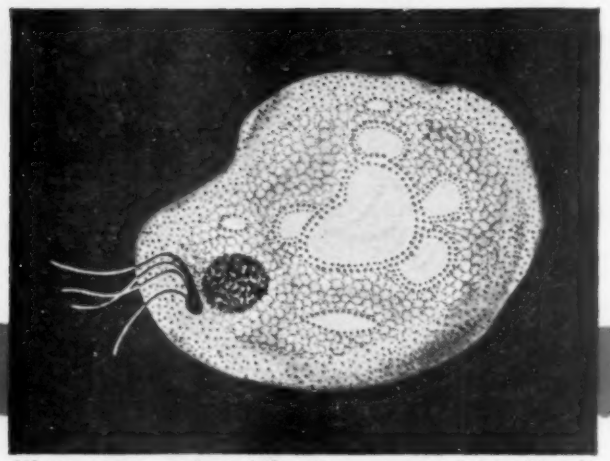


Histomonas meleagridis, the cause of blackhead infection in turkeys.

Add HepZide® to your Starter, Grower, and Finishing Rations

(NITHIAZIDE)

Since its introduction in 1957, as a soluble powder for drinking water medication, HepZide has proved a highly effective compound for the **control** of both blackhead and hexamitiasis in turkey flocks. Now, after months of testing under rigid field conditions, a **new** pre-mix—HepZide Mixture "20"%—is available. Provide your growers with continuous, high-potency protection against costly outbreaks of these important protozoan diseases.

HepZide Can Be Fed—With Complete Safety—To Turkeys of All Ages—HepZide, a patented product of Merck, has demonstrated a remarkable degree of potency against the parasites responsible for blackhead and hexamitiasis. But, in marked contrast to other anti-blackhead agents, HepZide is safer in practical use—will not interfere with **growth, sexual maturity, subsequent egg production, fertility or hatchability.**

Feed Consumption Remains At High Levels—Reduced intake of medicated feeds sometimes presents a serious problem to growers in trying to finish birds with efficient feed conversion ratios. Not so with HepZide. Rations containing this compound at recommended levels are palatable, readily consumed by young, growing or mature birds. And sustained feed consumption helps poults make consistent gains in weight, means maximum protection against blackhead and hexamitiasis—from brooding to marketing.

CHART A

HepZide checks blackhead, hexamitiasis losses

Total Flock Mortality

50% NO PROTECTION

Less than 2% CONTINUOUS PROTECTION WITH HepZide

These Beltsville White turkey broilers were sold at 16 weeks of age with an average weight of 8.07 pounds and a feed conversion of 3.15.

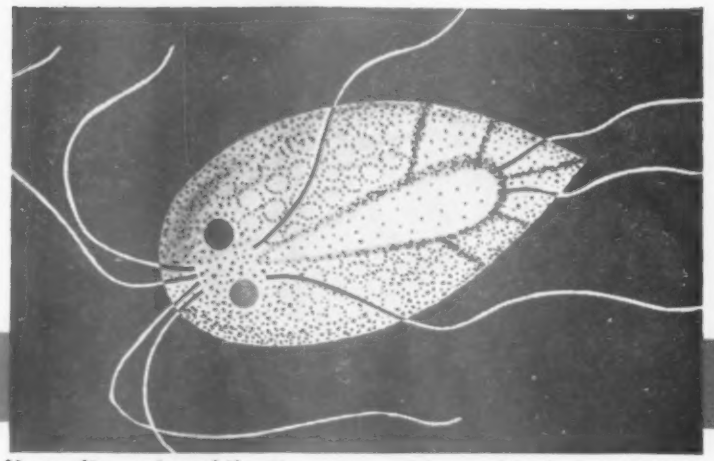
HepZide Checks Blackhead Losses

A wide range of effectiveness has been demonstrated by HepZide in a series of trials conducted under practical field conditions. On one farm (Chart "A"), one flock of Beltsville Whites had suffered 50 per cent mortality due to blackhead and hexamitiasis. A second flock of 9,000 Whites started on the same premises, with little or no clean up and disinfecting of quarters, was placed on rations containing prophylactic levels of HepZide from the time they were one day-old to 16 weeks of age. **The less than two per cent general mortality in this second flock** attests to the high degree of protection against these two protozoan diseases.

NCY PROTECTION AGAINST

HEXAMITIASIS

IDE EFFECTS!



Hexamita meleagridis, the cause of hexamitiasis in turkeys.

CHART B*

HEPZIDE HELPS GROWER MARKET HEAVIER BIRDS ON LESS FEED

2,325 Broad-Breasted Bronze Turkeys

Birds Started	2,325
Birds Finished	2,225
Mortality (all causes)	2%
Age When Sold	24 weeks
Weight When Sold (toms)	26.3 lb.
Weight When Sold (hens)	16.5 lb.
Feed Conversion	3.79

According to the pathologist supervising this trial the "flock had good weight, feed conversion and livability. There was no evidence of blackhead at any time."

A continuous preventive program pays off—Blackhead infections, no matter how mild, rarely confer immunity against subsequent attacks. And even light infections, or subclinical infections with no outward signs of disease, may result in mortality or serious setbacks in weight gains. In addition, blackhead and hexamitiasis strike birds at different ages.

The most practical and economical approach to the problem of blackhead (and hexamitiasis) is the continuous use of feeds medicated with HEPZIDE. Prophylactic levels of this compound will check tissue damage and mortality as a result of these diseases, will help your growers market heavier birds at an earlier age.

*The results shown in Chart "B" are representative of those reported from flocks under varying farm conditions, fed rations containing low levels of HEPZIDE from the time they were placed on litter.

This is a photomicrograph of an embryonated cecal worm egg (Heterakis gallinae).

Cecal worm eggs, carrying blackhead organisms, can survive in the soil **and transmit the disease for periods up to three years!** On overcrowded, or contaminated ranges, continuous protection against blackhead losses may be obtained through the continuous use of feeds medicated with prophylactic levels of HEPZIDE. Merck & Co., Inc., Chemical Division, Rahway, New Jersey.

Coccidiosis symptoms are sometimes difficult to detect—and, one sick poult can rapidly infect an entire flock.

S.Q.® (sulfaquinoxaline) added to your rations at low levels, will protect poults against profit-draining coccidiosis "breaks."

Are your customers interested in dual-action antibiotic fortification of their turkey rations? Recommend low-cost PRO-STREP® the effective combination of procaine penicillin and streptomycin sulfate in a ratio of 1:3.

HepZide

MERCK

with **THE MERCK MARGIN OF SURETY**

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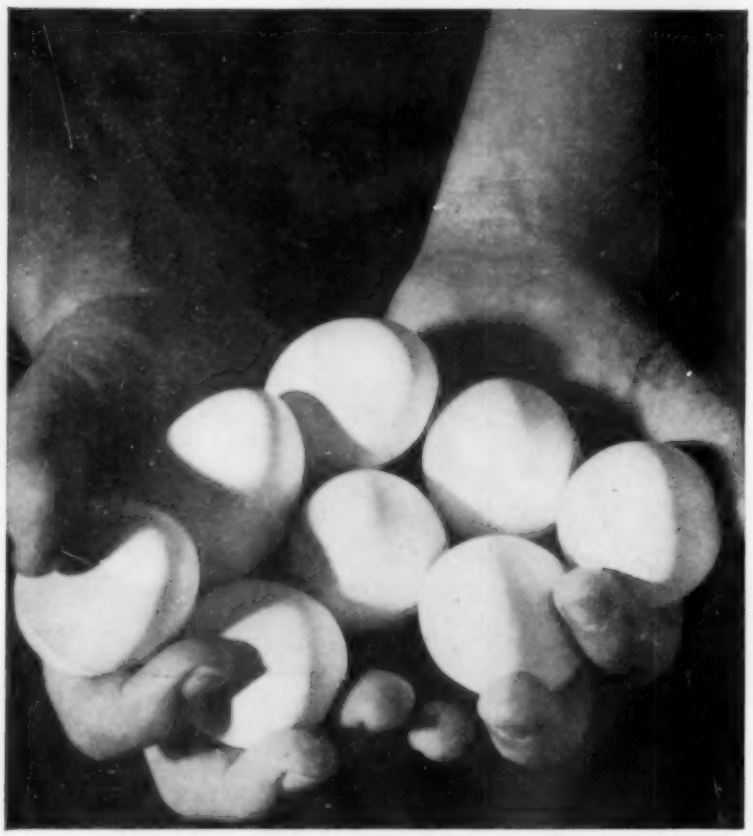
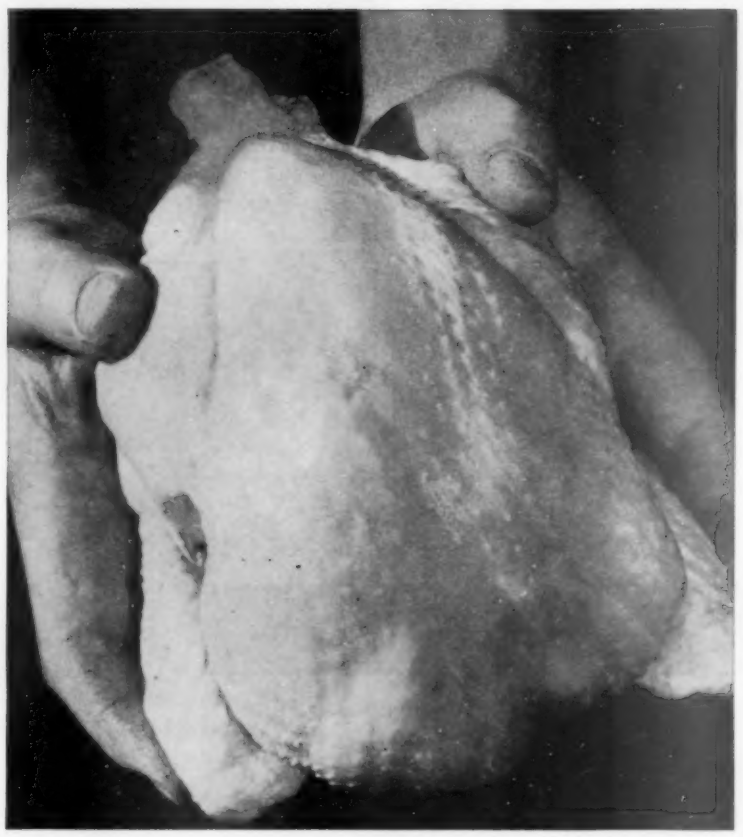
2 POULTRY PROFIT AIDS

STONEMO Granite Grit





SELL GIZZARD GRINDING
and More Eggs from Your Feed

For extra eggs, your customers' birds need gizzard teeth that are hard, sharp-cutting, quick-grinding, and the proper size. Stonemo hard granite grit is scientifically processed to give your birds *extra grinding surfaces.*

With each contraction of the gizzard, Stonemo Granite Grit rips open the tough hard film which encases the various nutrients of the finest mash. Stonemo also grinds fine the coarse scratch grains, making them more digestible, better used to produce more eggs.

In the latest work of Iowa State College, up to 10% more eggs were produced from the same feed when Stonemo was offered free choice, and with better feed conversion.

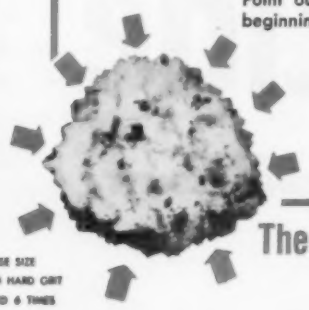
So, sell the importance of gizzard grinding with every lot of feed. Sell the right size Stonemo and watch your customers' poultry profits grow.

SELL GIZZARD GRINDING
and Extra Meat from Your Feed

If you have broiler customers who are having a hard time making a profit, here is a tip you and they will appreciate. In a series of feeding tests at our research farm, even when an all-mash diet was used, broilers were heavier, feed conversion was better, profits increased nearly ½ cent per pound against no grit—$16.85 per thousand birds.

Sell Gizzard Grinding, and your customers will find:

- **Birds will rid their gizzards of litter, fiber and feathers—make room for more meat-producing feed.**
- **Less feed will be used to produce a pound of meat, even on an all-mash feeding program.**
- **Birds get to market quicker—your customers start the next lot of broilers earlier—save time and money.**



COARSE SIZE
STONEMO HARD GRIT
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Make STONEMO your Assistant Salesman

Whenever you sell feed for pullets or broilers, sell Stonemo with it, and make feed do a better job. Point out how changing to larger size Stonemo—Medium beginning the fourth week, Coarse beginning the seventh week—will increase feed efficiency and step up profits.

For further research facts about Stonemo, proper feeding directions, and sales aids including posters, newspaper mats, radio scripts, and the popular hit record "Sing Chicken Sing," write:

STONE MOUNTAIN GRIT COMPANY, INC.
Lithonia, Georgia

The Grit with the "EXTRA GRINDING SURFACES"

FROM ONE DEPENDABLE SOURCE

Sta-Kleen Nesting Material

SELL Sta-Kleen

Sta-Kleen Nesting Material is a natural to sell. Clean nests are so badly needed by poultrymen that Sta-Kleen almost sells itself.

Think of being able to tell your customers they can reduce the number of dirty eggs up to 80%.

Think of the sales appeal to a farmer's wife when you say that Sta-Kleen saves the chore of washing or cleaning eggs.

Think of selling the extra profit angle of marketing top-quality eggs—eggs with the bloom still on the shells.

But that's not all. You can also sell less egg breakage, less cracked shells, less unmarketable eggs, for Sta-Kleen is soft, resilient, and cushions the eggs.

Just as important as the right egg-laying environment is Sta-Kleen's remarkable ability to repel dirt and absorb moisture. Droppings are quickly dehydrated and easily removed from the nests.

What are Sta-Kleen's Advantages to You as a Dealer?

There are four big reasons for you to stock and sell Sta-Kleen. All four can increase your profits.

1. **Sta-Kleen sales give you a good margin of profit.**
2. **Sta-Kleen is a repeat item that constantly builds your business.**
3. **Sta-Kleen is nationally advertised to help you build volume fast.**
4. **Sta-Kleen is display packaged in 50 lb. multiwall bags. It's easy to buy right along with your Stonemo Granite Grit.**

So, order Sta-Kleen today from your supplier of Stonemo Granite Grit. Write direct for folders, posters, newspaper mats.

STONE MOUNTAIN GRIT COMPANY, INC.
Lithonia, Georgia

Sta-Kleen ...another fine product to increase poultry profits

Potential Use of American Feed Grains Abroad

By Dr. Julius Hendel, Consultant,
and
John J. McCracken, U.S. Department of Agriculture

Twelve foreign countries were visited during April and May of 1958 to study the potential use of feed grains in Europe in the form of feed grains or end products resulting from the use of feed grains.

Countries visited were Spain, France, Switzerland, Italy, Greece, Israel, Turkey, West Germany, Denmark, the Netherlands, Belgium and the U.K.

Interviews were arranged with several persons in each of the countries. Those interviewed included:

1. U.S. agricultural attaches and their assistants.
2. Economic advisers.
3. Agricultural specialists in the International Cooperation Administration.
4. Consultants in embassies and in other governmental agencies dealing with agricultural problems.
5. Personnel of the American Soybean Council at Madrid and Rome.
6. Personnel in ministries of various countries relating to policy production, distribution, fiscal matters and research.
7. Associations including trade associations, production control associations, feed manufacturing associations and cooperatives.
8. Business leaders including bankers, transportation officials, wholesale dealers and retailers in small businesses, chain stores and super markets.
9. International traders (importers) and agents.

Conclusions

From these interviews and observations, the authors drew the following conclusions:

● All countries visited are anxious to improve their economic position and they prefer to conserve their balances of hard currency to purchase capital goods instead of food.

● The conservation of dollars forces governments to adopt uneconomic aid for domestic agricultural production. In many cases agriculture is protected to supply goods for export to obtain foreign currencies.

● There is a definite upward trend in the standard of living and diets in all countries visited. Britain, West Germany, Denmark, the Netherlands and Belgium have exceeded the expectations of the most ardent enthusiasts of the Marshall Plan. Spain, southern Italy, Greece, Turkey and Israel need additional aid to raise their diets of concentrated foods to increase the working efficiency of their people.

● The developed countries can afford to part with dollars but the source of food and feed grain purchases is guided by the flow of trade. The semi-developed countries have few dollars to spare and depend entirely on other means such as PL 480, International Cooperation Administration and relief programs to acquire U.S. food products for their people.

● The present delays in negotiations on PL 480 invariably cut into the essential requirements of the receiving countries.

● There is a definite natural trend towards increased animal and poultry husbandry. The rise in the broiler industry will be the most dramatic.

● An effective market development program in concentrated foods would increase the use of feedstuffs immensely, and the U.S. would share in the largest part of the increase.

● All countries are thinking more in terms of trade rather than aid. The bulk of the purchases of feed is guided by reciprocal trade.

● All countries welcomed the idea of market development. The degrees and methods of participation varied by countries.

● Any increase in the use of feed grains, to be effective, will require corresponding quantities of protein concentrates. Soybean producers will benefit indirectly.

EDITOR'S NOTE: The accompanying article is from a report by the authors on a two-month study of the potential use of U.S. feed grains in Europe. Their study, made for the Foreign Agricultural Service of the U.S. Department of Agriculture, shows a definite natural trend developing in Europe toward increased animal and poultry husbandry, with a particularly sharp rise predicted for broiler production. They conclude that an effective market development program for the use of feed grains and by-products should be inaugurated, with the U.S. approach geared to a program of "assistance to economic development" instead of "surplus disposal." Their observations and conclusions, because they relate to the problem of feed grain surpluses and possible use of U.S. feedstuffs, are of interest to the feed industry. Dr. Hendel, a Minneapolis consultant, is a former executive of Cargill, Inc., Minneapolis grain firm. Mr. McCracken is in the grain and feed division of the Foreign Agricultural Service.

Recommendations

The following recommendations are made:

1. An effective market development program for the use of feed grains and by-products should be inaugurated.
2. The U.S. approach to the use of feed grains should be geared to a program of "assistance to economic development" instead of "surplus disposal."
3. The program should be well-planned, long-term and tailor-made for each country. It must be based on a time table with definite continuity in mind. Principles of successful marketing development in the U.S. should be adapted.
4. The U.S. participants, in addition to the grain producers and exporters, should preferably include representatives from other industries such as manufacturers of poultry raising, processing, and warehousing equipment, as well as food merchandisers with emphasis on supermarket operators.
5. The headquarters for the market development project should be centrally located. Service to other countries would be furnished on request.

Dr. Julius Hendel

6. The personnel should consist of:
A. A comparatively young, energetic administrator, supported by a staff of experienced, practical, full or part-time technicians; retired educators and business executives can be called on.
B. The operating staff should be recruited from trained nationals.

7. In planning the program, best use should be made of available American Embassy and International Cooperation Administration personnel and close liaison developed with the Food & Agriculture Organization and personnel of existing programs.

General Observations

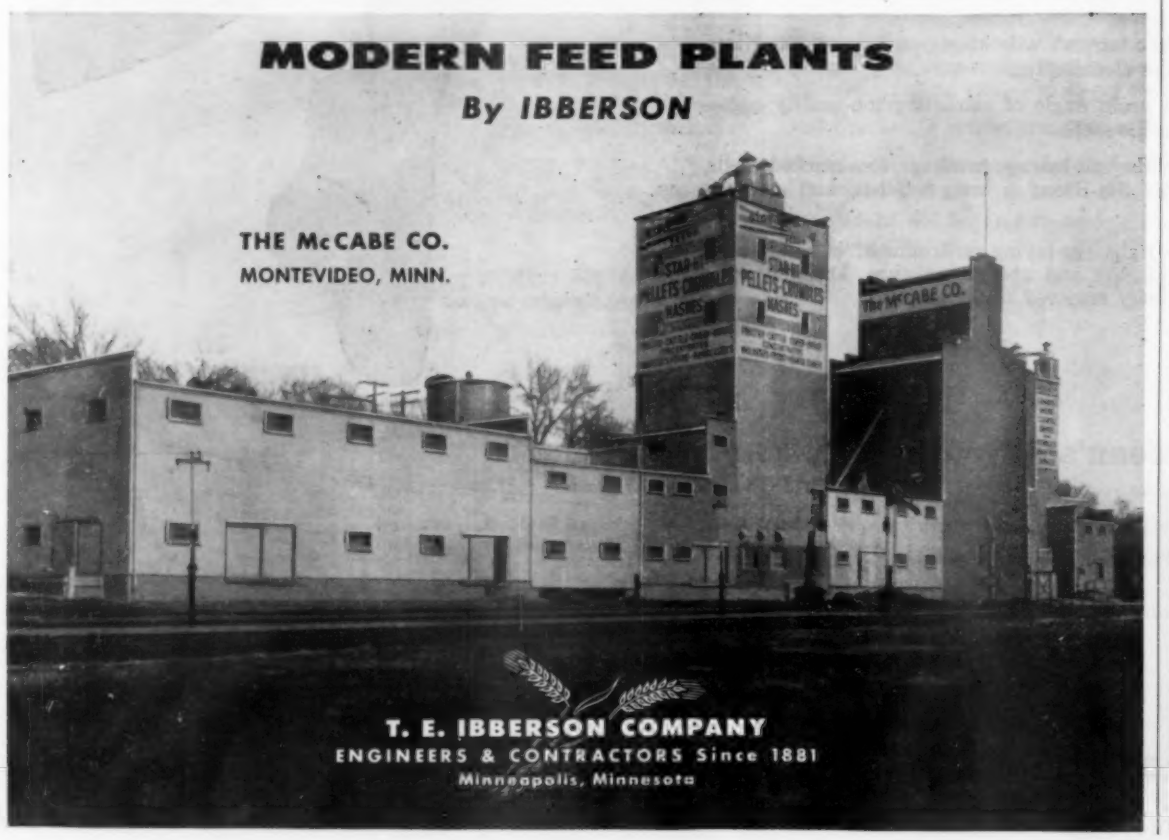
In the countries visited, the percentage of people on the farms is significantly higher than in the U.S. Politically, they must be given favorable treatment and this affects most governmental actions. The countries are all following U.S. methods of helping agriculture. They are all exchange balance-conscious.

In the developed countries, U.S. technological advances are well known and accepted. The feed industry is highly developed. The costs of production are gradually approaching those in the U.S. through introduction of labor-saving machinery and elimination of unnecessary handling of ingredients. However, profit margins are still large, both of manufacturers and producers, because they cling to the high-profit, low-volume philosophy.

Although the semi-developed countries are lagging, there has been a definite, slow improvement in the diets of the nations studied. This is linked to a general upward trend in the standards of living. What is needed is help to accelerate the rate of improvement. The growth in consumption of feedstuffs and concentrated foods would follow naturally.

The poultry (broiler and turkey husbandry) industry is receiving much attention and encouragement through public acceptance of poultry meat, and the desire of each government to produce it locally instead of importing from other countries. Based on discussion with people in all countries visited who are interested in the poultry industry, the expan-

(Turn to FEED GRAINS, page 62)



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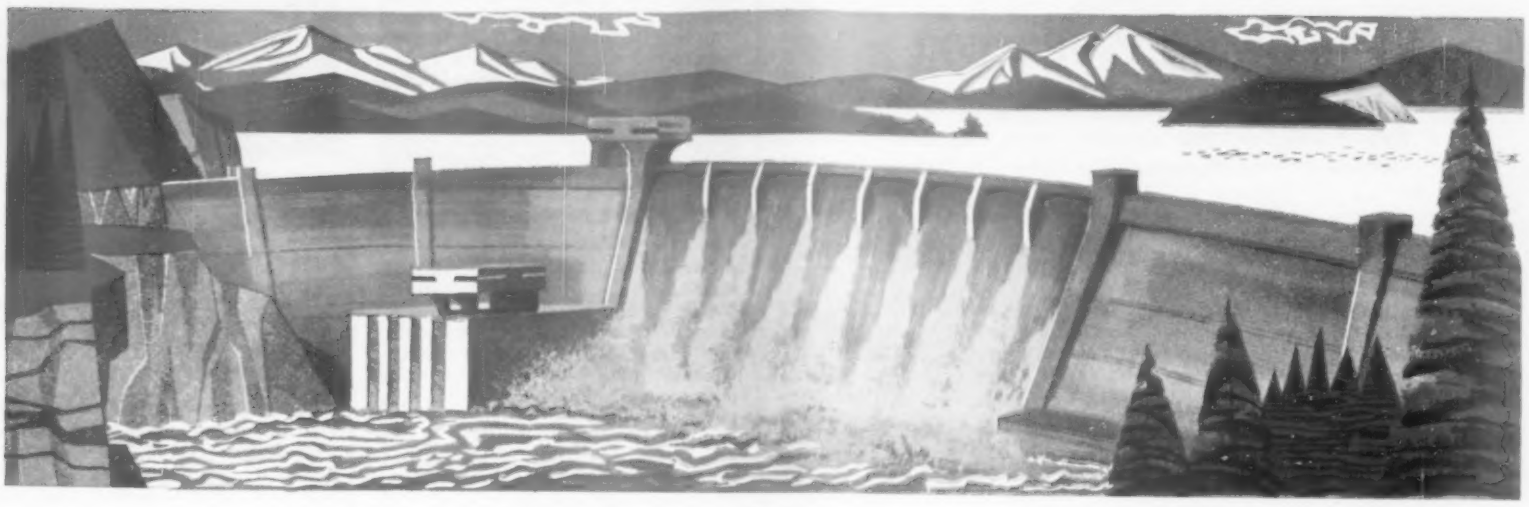

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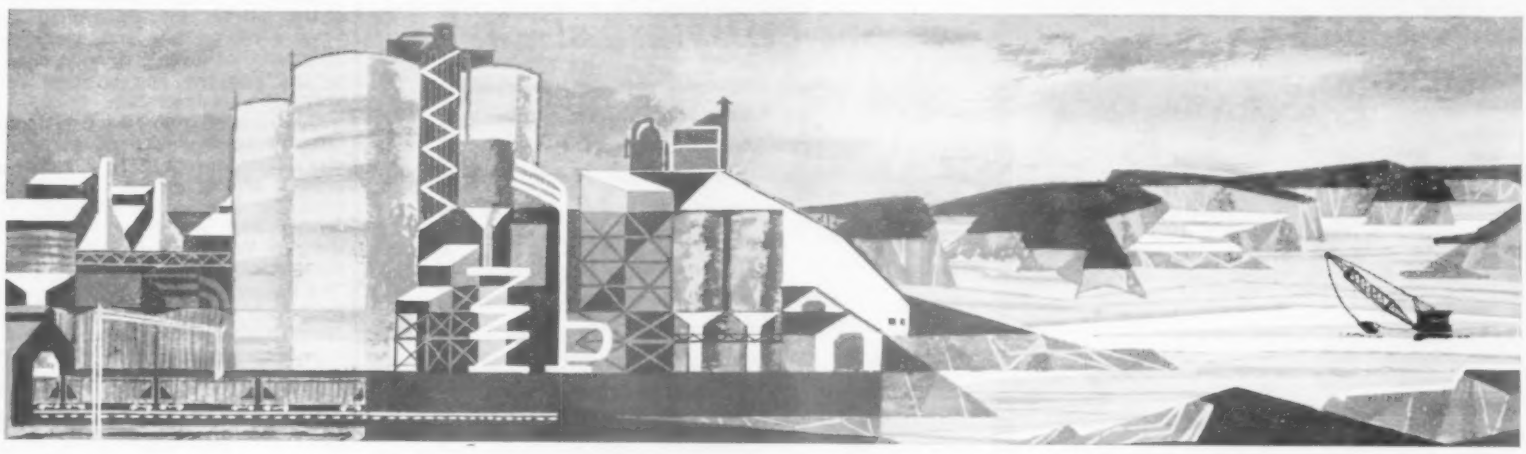

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Integrated and Special Programs For Swine Production

A Summary of Recent Developments in Contract Hog Production and Special Swine Programs Offered by Feed Manufacturing Firms and Others

By Prof. A. C. Magee
Texas A&M College System

EDITOR'S NOTE: A review of recent developments in contract hog production and special swine programs offered by feed companies and others is presented here by Prof. A. C. Magee of the department of agricultural economics and sociology at Texas A&M College, College Station. The article is from a talk by Prof. Magee at the Texas Nutrition Conference.

Important changes are taking place in the hog business. In swine production, it seems evident that we are moving toward larger, more intensive swine producing units which tend toward integration. Recent estimates indicate that already nearly a quarter of a million hogs are being fed out yearly on a contract basis.

The pig parlor plan offered by Ralston Purina Co. of St. Louis was one of the early changes in the pork industry. A few months ago it was said that more than 8,000 of these modern units were in operation. That was a gain of 5,000 over the number in use a year earlier.

In general, farmers using this plan raise market hogs in modern concrete-floored barns and farrow four or more times a year. However, in East Texas, some farmers have purchased feeder pigs to fatten under the pig parlor plan. The pig parlor way is advertised as helping the hog man organize and apply assembly line methods to commercial pork production.

Although the pig parlor plan has been encouraged by some packers, the operators of pig parlors in Texas have marketed their finished hogs wherever they please.

Feed Company Programs

Numerous other feed manufacturers have developed very detailed plans, or systems, for hog production. Some of these systems stress hog feeding practices primarily, whereas other systems cover many phases of management of the hog enterprise including housing and breeding. Typical of the latter group is the Nutrena Pigloo system offered by Nutrena Mills, Inc., Minneapolis. This system is said to cover "every phase of hog production, from conception to market, from breeding to farrowing."

Any of the different types of hog production systems may or may not be tied in with a packing company or other market outlet.

Another hog integration plan is offered by Staley Milling Co., a Kansas City feed manufacturer. Farmers who sign a contract with this company agree to buy Staley feed for a period of years. Under this plan, which is reportedly tied in with three packing companies, farmers are promised a market price that is 25¢ cwt. above the average Chicago price.

Lease Plan

A Des Moines feed company, Foxbilt, Inc., has still another variation of the contract hog raising plan. They have a special gilt and boar lease program that gives farmers a chance to get into the hog business with very little ready cash.

Gilts leased from this feed manufacturer are unloaded on the customer's farm in lots of 11. The farmer pays a service charge of $3.75 per head for the delivered herd. The farmer does not become owner of the gilts. They are returned to Foxbilt for disposal, usually after two litters. The farmer agrees to return one gilt from each litter to the feed company. He also buys Foxbilt premix to use with his own grain supply. This program allows the farmer to sell his hogs any place he pleases.

In Indiana, there is a farmer cooperative that may make many changes in the state's hog farming program. This group, the Producers Marketing Assn., Inc. of Indianapolis, proposes to produce feeder pigs in the southern part of Indiana for sale to a finish area in the northern part of the state.

In Iowa, farmers are considering a proposal to build their own processing plants. These plants would serve a 40 to 50 mile radius. Farmers would sign three to five-year contracts with the processing plant, agreeing to market their hogs through co-op owned facilities.

Another powerful force in the swine industry, the meat packers, has been concerned about the development of contract hog farming but the major packers have been slow to offer contract plans to farmers.

Texas Plan

Recently such a plan has been offered in Texas. The contract is for a three-year period. By the terms of the agreement, the producer agrees to:

1. Maintain gilts, sows and boars suitable for producing meat-type hogs.

2. Follow the breeding, growing, care and feeding practices set forth

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J. H. Bramfeld, Jr. T. J. Nolan, Jr.

PERSONNEL CHANGE — The oil meal department of Swift & Co., Chicago, has announced an exchange of sales managers at its soybean mills at Des Moines, Iowa, and Frankfort, Ind. Moving from the Frankfort plant to Des Moines is John H. Bramfeld, Jr. He started with Swift in 1950 in the contract sales department at the firm's general office in Chicago, and was there until moving to Frankfort, where he has been sales manager since 1953. He is a graduate of Quincy (Ill.) College. Thomas J. Nolan, Jr., will move to Frankfort to serve as meal sales manager, the position he has held in Des Moines since 1957. He started his career with Swift in 1950 as a feed department salesman at Salina, Kansas. He is an agriculture graduate of the University of Missouri.

Dairy Calves Fed Dynafac in Trials

ST. PAUL, MINN.—Results of an 84-day feeding trial using Dynafac in the rations of dairy calves were reported recently by W. A. Olson and J. B. Williams, dairy cattle researchers at the University of Minnesota.

They reported that among calves getting fresh skim milk and the additive, average gain was 0.99 lb. per day from birth to 42 days of age. Calves not getting Dynafac averaged 0.85 lb. daily during the same period.

During the second 42 days of the trial, calves which had received the Dynafac gained 1.59 lb. while those which had not received it averaged 1.86 lb. per day. For the entire 84-day trial, the no-Dynafac group averaged 1.38 lb. per day, against 1.29 for those fed the additive.

Just why Dynafac made a difference to begin with isn't known, Dr. Williams said. It did not affect calves at any age when fed along with dried skim milk, he reported.

in the plan for hog production of a particular feed manufacturer.

3. With the exception of herd replacements and breeding animals which may, under certain conditions, be sold otherwise, the producer agrees to sell to the "company" all hogs produced in accordance with the specified production plan.

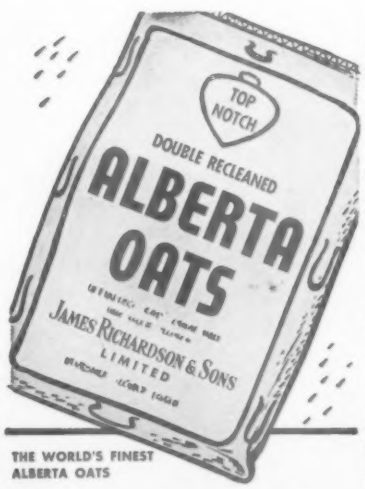
4. Deliver market hogs, transportation prepaid, to the "company."

The packing company in turn agrees to:

1. Purchase all hogs produced in accordance with the specified production plan.

The agreement also spells out how hogs will be weighed and graded and specifies that the price paid the producer will be based on prices at the Fort Worth market. For instance, hogs grading meat-type are to be purchased at a 75¢ cwt. premium above the high-low average for market hogs at the Fort Worth Stock Yards on the day of delivery. On the other hand, hogs grading fat or over finished will be discounted 75¢ cwt.

Contracts that tend toward integration in swine production may be originated by producers, by feed manufacturers, by packers or by anyone in the producer-supplier-processor-distributor chain.



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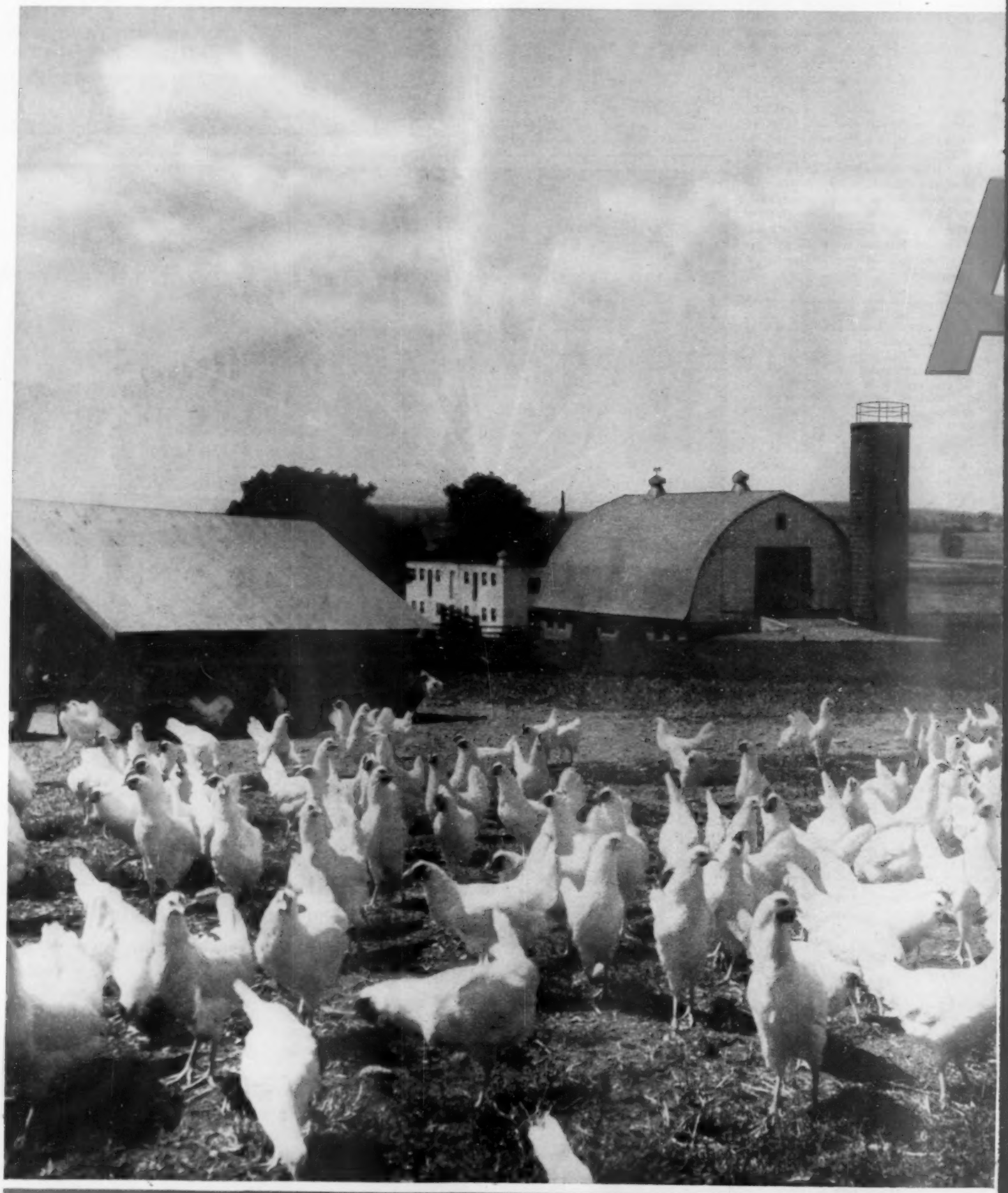

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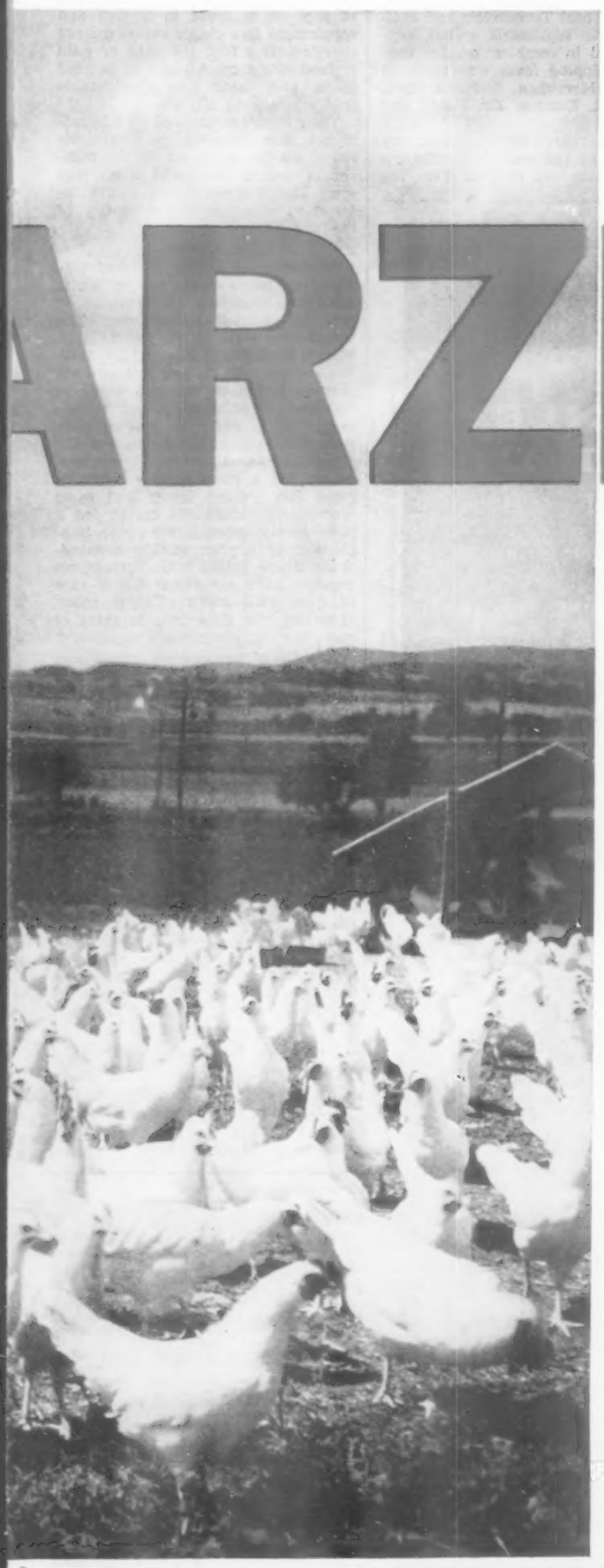

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Tennessee Station Reports Livestock Feeding Studies

KNOXVILLE, TENN.—Results of several experiments with roughages and drugs were reported at the Tennessee Agricultural Experiment Station's Livestock Field Days.

One of the projects involved comparing the wintering performance of beef calves fed corn silage or hay with and without Terramycin. A group of Angus calves fed corn silage gained significantly faster and required considerably less feed per 100 lb. gain than did the calves fed hay. Supplementing a corn silage ration with Terramycin resulted in a faster rate of gain when compared to the rate of gain by calves fed corn silage without Terramycin. Calves fed corn silage and the antibiotic required considerably less air-dry feed per 100 lb. gain than calves fed only corn silage. Supplementing the hay ration with Terramycin did not improve the rate of gain or feed efficiency in the test.

The most economical wintering gains were made by calves fed corn silage and 75 mg. of Terramycin per head daily. Feed costs per pound of gain were much higher for the hay-fed calves than for calves fed corn silage, according to the researchers, Dr. O. Glen Hall, Dr. C. S. Hobbs and John A. Odom.

Stilbestrol Implants

Another experiment involved the performance of steers implanted with stilbestrol pellets at different time intervals during the feeding period. The researchers were Dr. Hall, Dr. Hobbs and J. B. McLaren. In this test steers implanted with stilbestrol at the beginning of the feeding period gained significantly faster and more economically than control steers and steers that were implanted 56 days after the feeding period began.

A re-implant of stilbestrol after 56 days did not result in any improvement in the performance of the steers when compared to that of steers receiving a single implantation at the beginning of the experimental period. Final slaughter grades and dressing percentages were not significantly affected by any of the stilbestrol treatments.

Steers implanted with stilbestrol at the beginning of the experiment returned $51.28 per head over feed costs as compared to $38.82 for the control steers and $43-45 for the steers receiving the other stilbestrol treatments.

Shipping Fever Control

A preliminary study of the effectiveness of oral Terramycin and antihemorrhagic septicemia serum, separately and in combination, for controlling shipping fever was reported by G. M. Merriman, J. Hugh Felts, Prof. H. R. Duncan, Dr. Hobbs and Dr. Hall.

The researchers reported that any benefit from the use of Terramycin or antiserum was derived from the fact that the herdsman did not detect symptoms, other than fever, sufficient to warrant veterinary treatment. A similar test using a different group of calves was inconclusive since illness did not appear in any of the calves.

The report stated that data from the study indicated that rectal temperature is not the only criterion for illness due to shipping fever.

Finishing Swine

Dr. S. A. Griffin and Prof. C. C. Chamberlain, department of animal husbandry, reported on the effect of hygromycin and Aureomycin on growing finishing swine. They said that hygromycin and Aureomycin fed to pigs on concrete in a corn and supplement free choice ration did not significantly affect the rate of gain or feed efficiency. All lots made good gains, and there was considerable feed wastage in all lots.

Their report mentioned that hygromycin was effective in controlling round worms, as shown by the number of worms recovered when pigs were slaughtered. Round worm infestation was not severe in any of the lots.

Roughages

A comparison of the effect of various roughages and an antibiotic upon the wintering performance of beef calves was also reported. The researchers were R. A. Reynolds, J. Merrill Bird, Dr. Hobbs and Dr. Hall. The project was divided into two experiments. Calves fed corn silage in the first experiment gained significantly faster and more economically than did comparable calves fed the other roughages. In this same test, calves fed a good quality orchardgrass hay gained faster and more economically than did calves fed a poor quality orchardgrass silage. Supplementing a poor quality orchardgrass silage ration with Terramycin resulted in a somewhat faster rate of gain and more efficient gains. However, the difference in rates of gain was not statistically significant.

Results of the second experiment indicated that calves fed corn silage gained significantly faster than calves fed either orchardgrass silage or orchardgrass hay. Calves fed corn silage also made cheaper gains and more efficient gains than did the other calves. In the second experiment, the feeding of a good quality orchardgrass silage resulted in a faster rate of gain and considerably more efficient gains than did the feeding of a good quality orchardgrass hay.

Performance of beef calves fed orchardgrass silage was improved significantly by feeding 75 mg. of Terramycin per head daily. However, the antibiotic did not improve the rate of gain or feed efficiency of calves fed corn silage.

BEGINS MOBILE SERVICE

YORKVILLE, TENN.—The Yorkville Mobile Milling Service has opened here with Ed Jones as president. Grand opening of the new enterprise was held recently.

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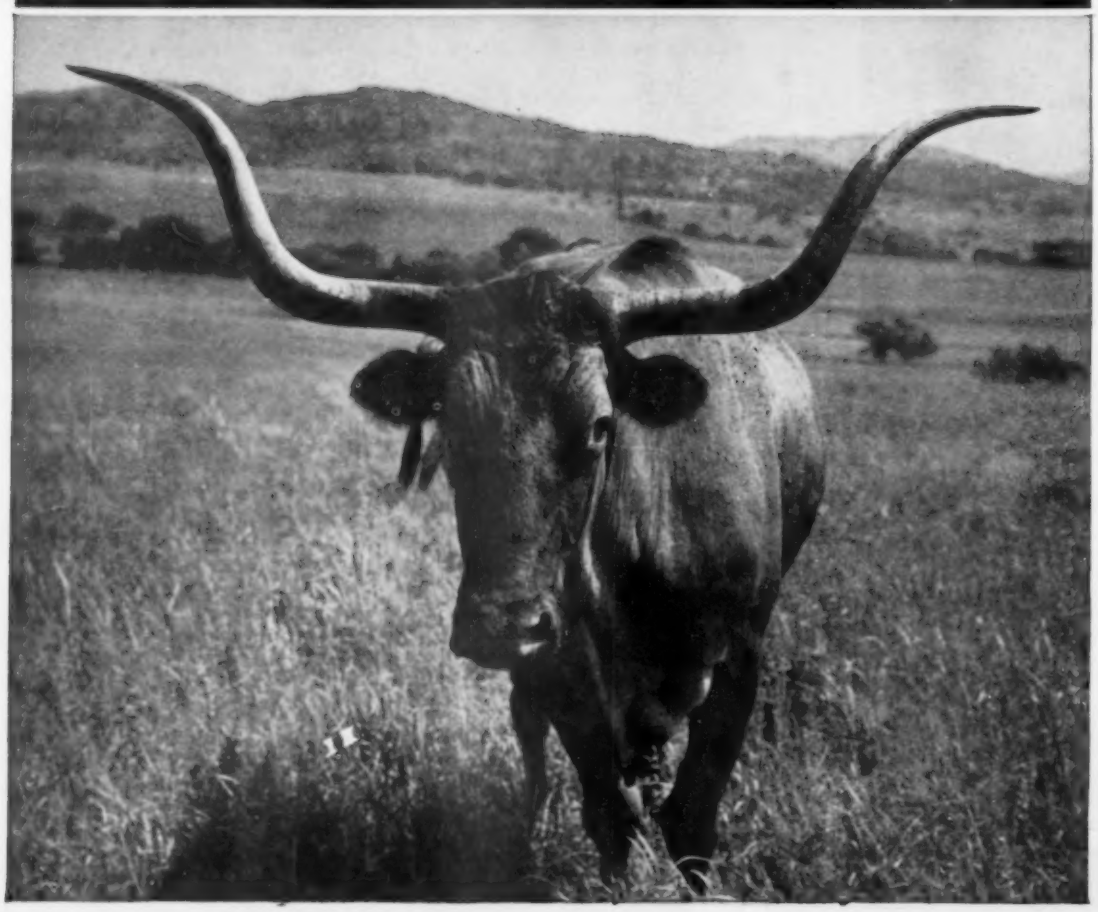

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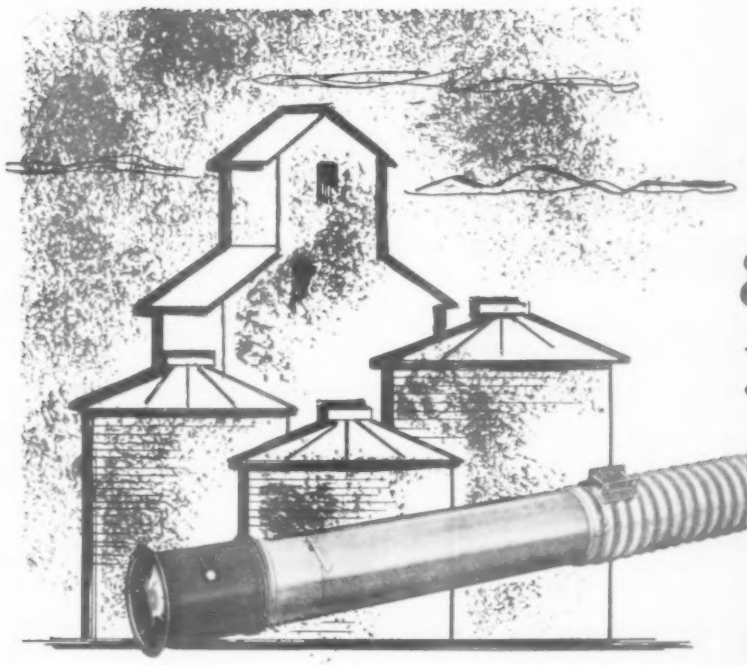

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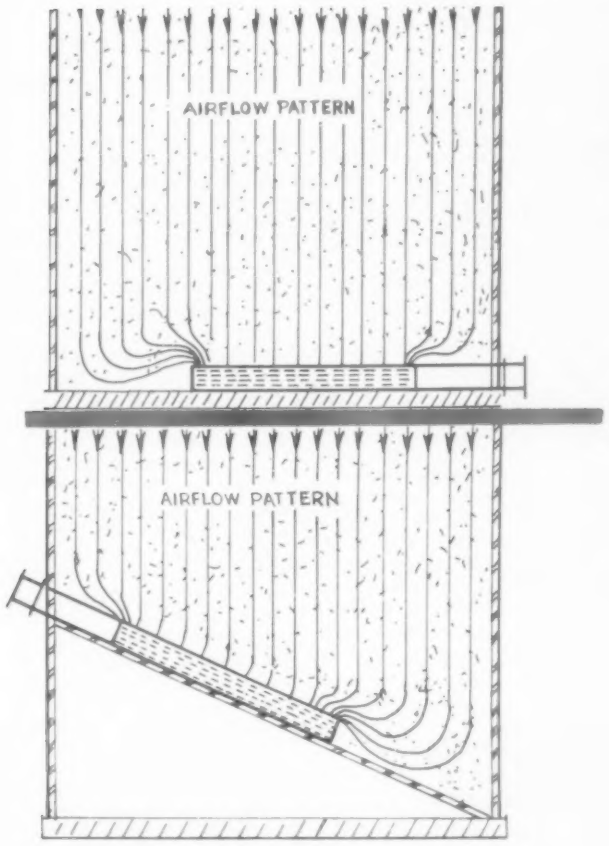

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Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

Aureomycin as a Protein-Sparing Agent and Its Influence on Minimum Starter Protein Level Satisfactory for Normal Growth of Calves

● J. P. Everett, Jr., L. D. Brown, C. A. Lassiter, D. R. Jacobson and J. W. Rust, University of Kentucky; Journal of Dairy Science, Vol. 41, No. 10, October, 1958, pp. 1407-1416.

AND

Influence of Antibiotics on the Growth and Protein Metabolism Of Young Dairy Calves

● C. A. Lassiter, R. M. Grimes and C. W. Duncan, Michigan State University; Journal of Dairy Science, Vol. 41, No. 10, October, 1958, pp. 1417-1424.

ABSTRACTS

Since the above two papers are very closely related in subject matter, they are abstracted together.

The Kentucky group used 60 two-day-old Holstein and Jersey calves on a limited milk-hay-starter system to determine whether Aureomycin spared dietary protein and to ascertain the minimum starter protein levels satisfactory for normal growth for such calves. Five starters ranging from 6.3 to 14.2% protein were fed, both with and without Aureomycin (15 mg. Aureomycin per pound of pelleted starter). In this study Aureomycin failed to give a significantly greater growth response at lower protein levels than at higher protein levels—it increased body weight gains of calves 18.5% on the low protein starter and 17.8% on the high protein one. Nitrogen retention for the Aureomycin fed animals was 11 grams per day, while for the controls it was 10.5 grams per day.

Although Aureomycin failed to spare dietary protein, it did give satisfactory and similar gains to starters which contained at least 2% less protein. The antibiotic had no significant effect on apparent digestibility of any of the nutrients in the ration; nitrogen retention; blood levels of plasma protein; urea nitrogen or nonprotein nitrogen, although slightly lowering the last two.

Calves on the 12.2 and 14.2% protein starters had significantly higher coefficients of apparent digestibility of crude protein, and those on the highest protein level had significantly greater nitrogen retention than those on the lowest protein starter.

The Michigan workers used 21 two-day-old male calves raised on the milk replacer-starter-hay system to 86 days of age. One group of calves (7 calves) was placed on the basal milk replacer composed of 52.4 lb. dried skimmilk; 30 lb. cerelose; 10 lb. corn distillers dried solubles; 5 lb. dried whey; 2 lb. dicalcium phosphate; ½ lb. salt containing cobalt and iodine; and 0.1 lb. vitamin and mineral mix. Calves were completely removed from the milk replacer at 50 days of age and received only 4 lb. of whole milk daily from 3 to 10 days of age. Groups 2 and 3 received the basal milk replacer supplemented with either 50 mg. of Aureomycin or 50 mg. of bacitracin per pound of milk replacer.

All groups had access to alfalfa hay and calf starter at one week of age free-choice, except that large breed calves were limited to a maximum consumption of 5 lb. calf starter daily and small breed calves to a maximum of 4 lb. calf starter daily. Group 2 and 3 calves received calf starter supplemented with either 15 mg. per pound of crystalline Aureomycin or bacitracin.

Although both antibiotics increased the consumption of starter and total feed resulting in improved rate of gain and skeletal growth of calves, the differences were not significant, although approaching significance at both 7 and 12 weeks of age. In this study the growth stimulation resulting from bacitracin was similar to that produced by Aureomycin.

Both antibiotics significantly lowered the coefficients of digestibility for dry matter and crude fiber, but did not seem to influence other nutrients or have an effect on nitrogen retention. Neither antibiotic appeared to have any marked effect on the level of blood urea nitrogen or nonprotein nitrogen, but Aureomycin significantly increased the level of total serum protein, while bacitracin had a depressing effect.

COMMENT

The two experiments reported above were undertaken to shed further light on the possible explanation for the growth promoting effect of antibiotics for young calves reared under normal herd conditions. Several workers have suggested that antibiotics could possibly stimulate the growth of swine, poultry and rats by sparing crude protein in the diet.

Jensen et al. (1955) suggested that to demonstrate dietary sparing of protein it is necessary to demonstrate a greater growth response at low levels of protein than at higher ones; an increased nitrogen retention, especially at low-protein levels; and to show a significant protein and antibiotic interaction. The above two experiments show that at least in the case of dairy calves, no sparing of protein is caused by addition of antibiotics to the diet. The exact mode of action of antibiotics in promoting growth of dairy calves remains still unsolved although in the Michigan work there is an indication that the mode of action of antibiotics is through a reduction in disease level, thus causing a reduction of the serum gamma-globulin fraction of the blood protein. Certainly further work is necessary to adequately prove this point, especially under rather strict disease-free conditions.

It is also interesting to note that in the Michigan trials bacitracin promoted as good growth as Aureomycin with dairy calves—normally, this is not apt to be the case, according to most experiments so far reported.

●

Timely and Worth Noting

THE TYROSINE CONTENT OF FARM FEEDS; C. M. Lyman, B. J. Camp and H. M. Tiller, Texas Agricultural Experiment Station; Journal of Agricultural and Food Chemistry, Vol. 6, No. 10, pp. 767-770, October, 1958.

A new method is reported for the stabilization of tyrosine during the acid hydrolysis of carbohydrate-containing feedstuffs by adding excess tryptophan which reacts with the carbohydrate, leaving the tyrosine free.

Using this method, the tyrosine content of 138 different feedstuffs was determined, using Leuconostoc mesenteroides as the microbiological test organism. Although tyrosine is not one of the essential amino acids, it is important to know the tyrosine content of farm feedstuffs since quantitative requirements are greater for phenylalanine, an essential amino acid, if tyrosine is not present or is low in the diet.

Lactating Dairy Cows To Be Fed Terramycin

MANHATTAN, KANSAS—An experiment designed to test whether the feeding of Terramycin will increase milk production is being set up at Kansas State College, the college has announced.

Dr. E. E. Bartley, dairy scientist at the college, said interest in the work was stimulated by a recent report that feeding Aureomycin to lactating cows increased milk production. Working with Dr. Bartley to get additional information on effects of antibiotics in milk production is F. C. Fountaine, also of the dairy husbandry department.

The experiment is being conducted with a $2,300 grant-in-aid from Chas. Pfizer & Co., Inc.

Dr. Bartley said Terramycin will be added to the grain ration twice daily to supply 75 milligrams for each 1,000 lb. of body weight. The grain is 12% protein concentrate, and average quality alfalfa hay will be used as roughage.

Two groups of cows will be used. One group will receive Terramycin for three weeks, no Terramycin for three weeks and Terramycin again for three weeks. Cows in the second group will receive the antibiotic only during the second period. In addition, there will be a two-week preliminary period and two-week transition periods between each portion of the test.

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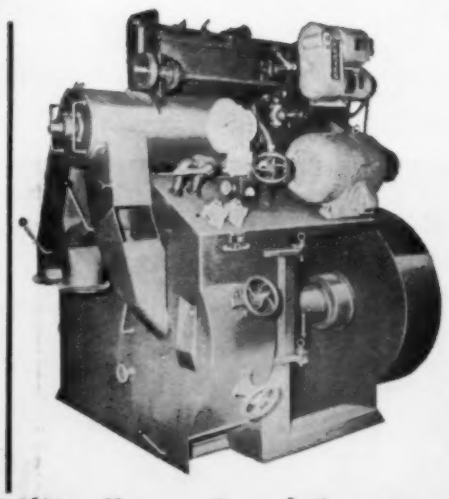

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SERVICE BULLETIN for members of the feed and poultry industries

Coccidial Life Cycle .

Prepared for members of the feed and poultry industries in the interest of poultry health. Merck & Co., Inc., Chemical Division, Rahway, New Jersey.

Reprints of this chart, and other articles in the series of Service Bulletins, are available on request.

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The miracle of modern drugs has resulted in disease control never before believed possible. But to some degree, it has also brought about an equalization process ...the emergence of organisms which escape the action of even the most potent drugs. Certain strains of coccidia now appear to fall into this category.

...So, if symptoms of coccidiosis appear in your flocks, consult a poultry pathologist at once to arrive at a sound diagnosis—to determine whether the symptoms are, indeed, due to unusually virulent strains of coccidia or to some other primary or masking infection.

...Keep in mind that maximum profits depend not only on an effective coccidiostat. Management practices for the production of healthy broilers or replacement chicks are essential to any operation.

...Good stock, good feed as well as good management are needed by your flock to obtain the peak of its genetic potential.

Protect flock health... increase poultry profits

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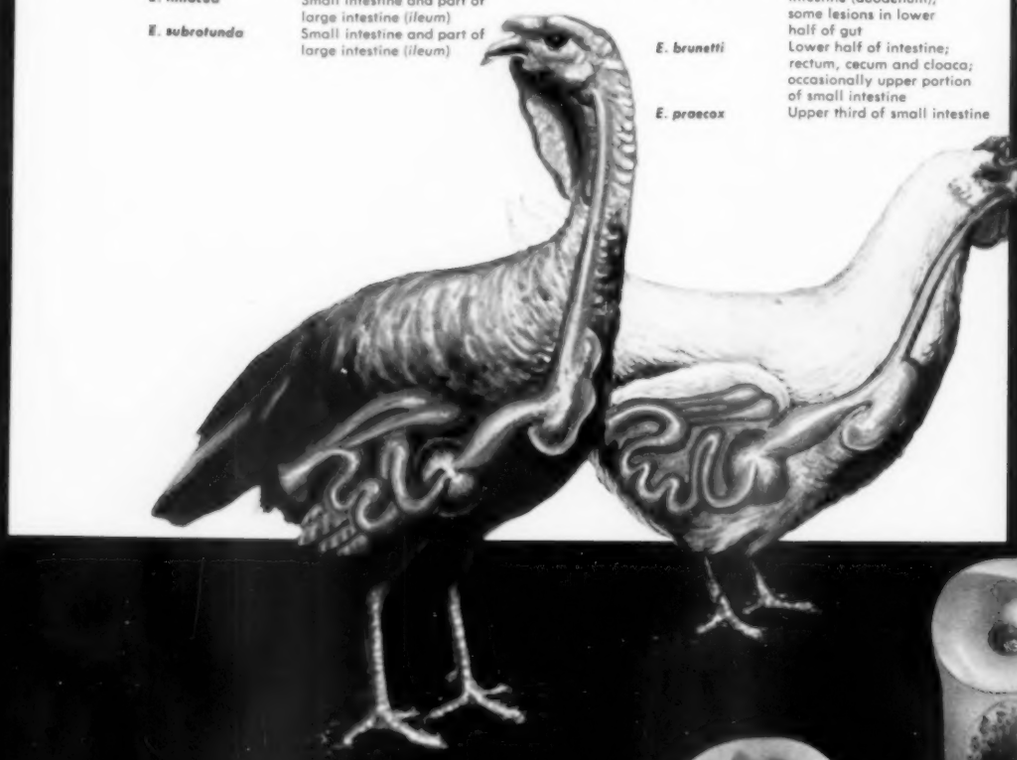
TURKEY COCCIDIA

Species	Region of Intestine Affected
E. meleagridis	Cecum
E. meleagrimitis	Upper third of small intestine (*jejunum, duodenum*)
E. dispersa	Duodenum, small intestine and cecum near bifurcation
E. gallopavonis	Lower half of intestine, cecum
E. adenoides	Lower half of intestine, rectum, cecum
E. innocua	Small intestine and part of large intestine (*ileum*)
E. subrotunda	Small intestine and part of large intestine (*ileum*)

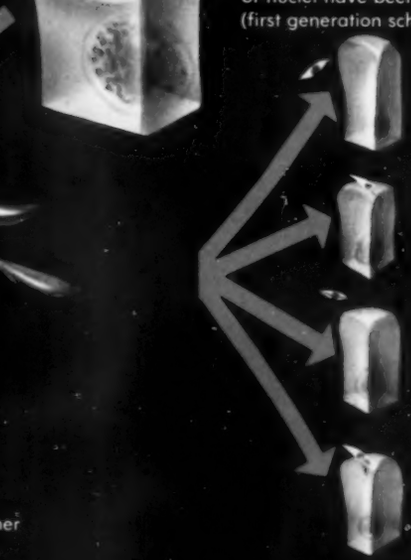
CHICKEN COCCIDIA

Species	Region of Intestine Affected
Eimeria tenella	Cecum
E. necatrix	Middle third of small intestine; occasionally cecum
E. acervulina	Upper half of small intestine
E. mitis	Upper half of small intestine
E. maxima	Middle and lower half of small intestine
E. hagani	Upper half of small intestine (duodenum); some lesions in lower half of gut
E. brunetti	Lower half of intestine; rectum, cecum and cloaca; occasionally upper portion of small intestine
E. praecox	Upper third of small intestine



1. OOCYSTS
These microscopic, egg-like bodies are passed in the droppings of birds infected with cecal or intestinal coccidiosis. A field of coccidial oocysts, greatly magnified, is shown above.

6. The nucleus divides and the process is repeated until a considerable number of nuclei have been formed (first generation schizont).

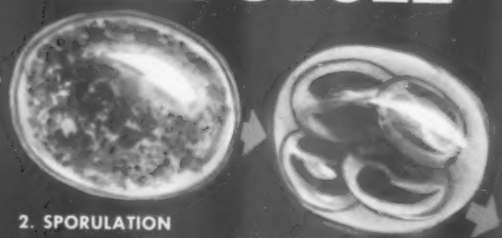


7. The nuclei contained in the schizont develop into sickle-shaped *merozoites* which lie parallel to each other in formed groups that resemble sections of an orange. The merozoites then break out of the epithelial cells and invade new cells in the intestines to form a *second generation of schizonts* and *merozoites.**

8. After two or three generations of the merozoites enter epithelial cells of the life cycle.

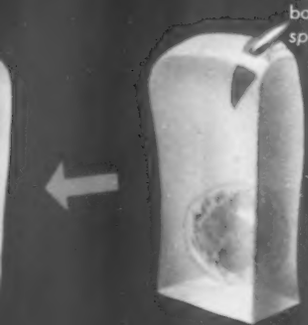
Some of the merozoites develop into
Other merozoites produce female ce

COCCIDIAL LIFE CYCLE

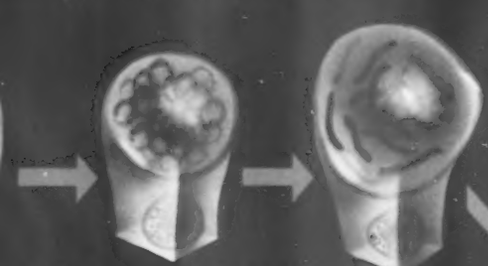


2. SPORULATION

2A. SPORULATED OOCYST
After 24 to 48 hours, in favorable conditions — warmth, moisture and air — four spores develop within the oocyst. Each of the four spores, in turn, forms two banana-shaped bodies called *sporozoites*.



5. Each sporozoite released from the sporocyst penetrates the wall of an epithelial cell and develops into a rounded body enclosing a nucleus (*trophozoite*).



ns of asexual division, certain of cells and start the sexual phase

o into male cells known as microgametocytes.
le cells or macrogametocytes.

9. The union of the one male cell, or *microgamete*, and one female cell, or *macrogamete* (fertilization), results in the formation of an oocyst which is then passed from the body of the bird, completing the coccidial life cycle.

3. Ingestion of ripe or sporulated oocysts brings about the first phase of infection in the bird. Enzymes in the digestive tract (pancreatic juice, in particular) dissolve the protective oocyst wall (*excystation*). The released sporozoites then invade the epithelial cells of the mucosa of the digestive tract.

4. The development of coccidia in the epithelial cells is best illustrated by following a sporulated oocyst through one of the asexual divisions (*schizogony*) and, finally, through the sexual phase of the life cycle.

*
Coccidiostatic agents such as GLYCAMIDE™ (glycarbylamide), S.Q.® (sulfaquinoxaline) and NICARB® (nicarbazin) are primarily effective against the second generation of schizonts and merozoites. Since sporozoites and first generation schizonts and merozoites are not affected, feeding of coccidiostats permits the development of immunity to reinfection.

Convention Calendar

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear ahead of the ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

• • •

1959

Jan. 22-24—New Mexico Grain & Feed Dealers Assn.; Hilton Hotel, Albuquerque; sec., Parley Jensen, Box 616, Albuquerque, N.M.

Feb. 12-13—Utah Feed Manufacturers & Dealers Assn. Nutrition Conference; Brigham Young University, Provo; sec., Dr. Lawrence Morris, Brigham Young University, Provo, Utah.

Oct. 6-8 — Northeastern Poultry Producers Exposition; Farm Show Building, Harrisburg, Pa.; sec., Dr. Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

• • •

Nov. 30-Dec. 1 — Tennessee Feed Manufacturers Assn.; Noel Hotel, Nashville, Tenn.; sec., Charles H. Warfield, 602 American Trust Bldg., Nashville 3, Tenn.

Dec. 3—Ontario Retail Feed Dealers Assn.; King Edward Sheraton Hotel, Toronto; sec., Murray H. McPhail, 60 Yonge St., Toronto 1, Ont., Canada.

Dec. 4-5—North Carolina Animal Nutrition Conference; North Carolina State College, Raleigh, N.C.; chm., Dr. E. R. Barrick, Department of Animal Husbandry.

Dec. 5-6—Arkansas Turkey Federation; Arkansas Polytechnic College, Russellville, Ark.; exec. sec., Charles D. Hawks, P.O. Box 1146, Little Rock, Ark.

Dec. 8-9 — Veterinarian-Nutrition Conference; President Hotel, Kansas City; sponsored by Midwest Feed Manufacturers Assn.; exec. vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City, Mo.

December 9-10—Minnesota Poultry & Hatchery Assn.; Radisson Hotel, Minneapolis; sec., L. L. Baumgartner, Litchfield, Minn.

1959

Jan. 5-6 — Kansas Formula Feed Conference; Kansas State College, Manhattan, Kansas; chm., Dr. Tom Avery, Poultry Department.

Jan. 6-7—Elevator Business Managers Clinic, Michigan State University, Kellogg Center, East Lansing, Mich.; chm., Earl H. Brown.

Jan. 6-8—National Turkey Federation Convention and Exposition; Veterans Auditorium, Des Moines, Iowa;

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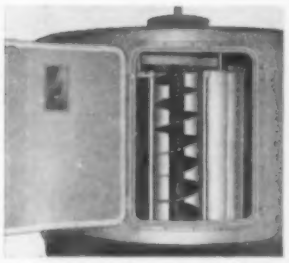

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DECEMBER

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sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 9-10 — Kansas Seed Dealers Assn.; Hotel Broadview, Wichita; sec., O. E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

Jan. 11-13—Northwest Retail Feed Assn.; Hotel Pick-Nicollet, Minneapolis; sec., W. D. Fleming, 112 Grain Exchange Bldg., Minneapolis, Minn.

Jan. 18-20—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis 4, Ind.

Jan. 20—Nevada Feed Conference; University of Nevada, Reno, Nev.

Jan. 20-21—North Dakota Poultry Industries Convention; Elks Club, Fargo, N.D.; chm., B. J. Duke, North Dakota Poultry Improvement Board, Bismarck, N.D.

Jan. 26-28 — Southeastern Poultry & Egg Assn., Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Jan. 28-30—American Dehydrators Assn., Shamrock-Hilton Hotel, Houston; exec. vice pres., Joseph Chrisman, Board of Trade Bldg., Kansas City 5, Mo.

Jan. 29-30—Oregon Animal Industry Conference; Oregon State College, Corvallis; sponsored by Oregon State College and Oregon Feed & Seed Dealers Assn.; sec., Russ Hays, 702 Lewis Bldg., Portland, Ore.

Jan. 31—Regional Swine Producers Day; Ratcliffe Hicks Bldg., University of Connecticut, Storrs, Conn.

Feb. 6-7—Minnesota Turkey Growers Assn.; Leamington Hotel, Minneapolis; sec., A. E. Eisenmenger, 2200 University Ave., St. Paul, Minn.

Feb. 9-10—Montana Nutrition Conference; Montana State College, Bozeman, Mont.; chm., Dr. O. O. Thomas, Animal Industry Dept.

Feb. 11-12 — Feed Mill Production School; Leopold Hotel, Bellingham, Wash.; sponsored by Washington State Feed Assn.; mgr., J. G. Wilson, 814 Second Avenue Bldg., Seattle, Wash.

Feb. 12-13 — Washington State Feed Assn.; Leopold Hotel, Bellingham; mgr., J. G. Wilson, 814 Second Avenue Bldg., Seattle, Wash.

Feb. 13-15—Institute of American Poultry Industries' Fact Finding Conference; Municipal Auditorium, Kansas City, Mo.; Institute of American Poultry Industries, 59 E. Madison, Chicago 2, Ill.

Feb. 16-18—Midwest Feed Manufacturers Assn., annual convention, Muehlebach Hotel, Kansas City, executive vice president, Lloyd Larson, 20 West Ninth St., Kansas City, Mo.

Feb. 22-24—Colorado Grain, Mill & Feed Dealers Assn.; Shirley Savoy Hotel, Denver, Colo.; sec., Olaf Erickson, 714 Cooper Bldg., Denver 2, Colo.

Feb. 23-26 — Colorado Livestock Days; Colorado State University, Ft. Collins, Colo.; chm., Dr. Lamar Esplin.

Feb. 24-25—Virginia Feed and Nutrition Conference; Hotel Roanoke, Roanoke, Va.; co-chm., Wm. G. Ritchie, J. S. Ritchie & Sons, Petersburg, Va., and Paul M. Reaves, professor Dairy Science, Virginia Polytechnic Institute, Blacksburg, Va.

Feb. 26—Illinois State Turkey Growers Assn.; Animal Sciences Laboratory, University of Illinois, Urbana, Ill.; sec., S. F. Ridlen, Poultry Extension Specialist.

March 1-3 — Ohio Grain & Feed Dealers Assn., Inc.; Neil House, Columbus, Ohio; sec., G. E. O'Brien, 710 N. Ohio Street, Greenville, Ohio.

March 19-20—Oregon Feed & Seed Dealers Association; Multnomah Hotel, Portland; sec., Russ Hays, 702 Lewis Bldg., Portland 4, Ore.

March 19-20—Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. Richard D. Creek, Poultry Husbandry Department, University of Maryland, College Park, Md.

March 25—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati; sponsored by Distillers Feed Research Council; exec. director, Dr. Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati 2, Ohio.

April 2-4—Pacific Dairy & Poultry Assn.; Coronado, Cal.; sec., Carl E. Nail, 1304 E. 7th St., Los Angeles.

April 12-15—National Fisheries Institute; Hotel Commodore, New York City; asst. gen. mgr., Mal Xavier, 1614 20th St. N.W., Washington 9, D.C.

April 12-17—Grain Elevator & Processing Superintendents; Multnomah Hotel, Portland, Ore.; sec., Dean M. Clark, 1120 Board of Trade Bldg., Chicago 4, Ill.

April 30-May 2—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

May 8-10 — Grain Processing Machinery Manufacturers Assn.; Chicago; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

May 11-13—American Feed Manufacturers Assn. Convention and National Feed Industry Show; Conrad Hilton Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

May 15-16—Missouri Grain, Feed & Seed Assn.; Hotel Governor, Jefferson City, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

June 7-9—Indiana Grain & Feed Dealers Association; Sheraton Hotel, French Lick, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 7-9 — Eastern Federation of Feed Merchants, Pocano Manor Inn, Pocano Manor, Pa.; sec., Austin W. Carpenter, Sherburne, N.Y.

June 8-10—Alabama Poultry Industry Assn.; Municipal Auditorium, Birmingham; exec. sec., W. L. Walsh, P.O. Box 567, Montgomery, Ala.

June 9-10—Association of Southern Feed and Fertilizer Control Officials; Velda Rose Motel, Hot Springs, Ark.; sec., Bruce Poundstone, Agricultural Experiment Station, University of Kentucky, Lexington, Ky.

July 10-14 — Georgia Feed Assn.; General Oglethorpe Hotel, Savannah, Ga.; sec., Will L. Kinard, 3240 Peachtree Rd. Bldg., Atlanta 5, Ga.

Research News AND Review

A roundup of scientific information prepared for the feed industry
Reprinted complete from AGRAData, Vol. 2, No. 6

Pfizer

Creep Feeding Calves

A comprehensive summary of recent literature on this important feeding practice.

A program of beef calf management which provides energy feeds, other than grass and milk to the nursing calf, has been studied by many experiment stations and has been practiced for many years by cattlemen. This system is commonly called creep-feeding whether calves are hand-fed in pens apart from mother cows, or self-fed from feeders located in pastures to which cows do not have access. Creep-feeding calves might be called a specialized practice of beef calf production. Not all farms or ranches lend themselves to this plan. Additional labor, equipment and feed are required when a creep-feeding procedure is followed (1).

Strong market for fat calves

The beef industry in some areas has been moving toward the marketing of younger cattle, and toward more intensified schemes of producing them (2, 3, 4, 5 & 6). This increased interest in producing fat slaughter calves as a means of securing a quick return from the cow herd is partly due to strong market demand for fat calves after marketing the bulk of fat cattle and before market arrival of grass-fed cattle (5).

Many plain calves can be fattened sufficiently while on cow and creep-feeder to produce a desirable light-weight carcass in U.S. Choice and Good grades. Keen demand for calf carcasses by large chain stores to service consumer demand has stimulated production of finished calves in many areas. Plain calves can often be handled profitably under this system (2 & 5).

However, many producers with high-grade commercial herds consider developing "two-way" calves—with enough quality and finish to sell to either feeder or packer in Prime Choice and Good grades. This necessitates fall calving and creep-feeding in order to obtain desirable weight and finish by the time the market favors this type of beef. Steer calves of good quality may find a strong early feeder market, while heifers may sell best to packers (5).

Suckling calves gain faster

Creep-fed suckling calves will make faster gains if they are fed a well-balanced ration in addition to any pasture or hay they might receive (7). Calves can be started on creep-feed when they are three to four weeks of age (3). Creep-feeding beef calves may increase weight to as much as 100 pounds per head from birth to weaning age (2, 3, 4, 5, 8, 9, 10, 11, 12, 13 & 14). During the first six to eight months of the calf's life management practices will pay greater dividends than during any other period (8). Calves which are nursing will make faster gains if they are fed a well-balanced ration. It is common practice among beef producers to provide a creep in a frequented section of the pasture (7).

Suckling dairy calves scheduled for the veal market can also be produced to an early finish utilizing the creep-feeding process. This particular enterprise is for a short duration only.

Fall calves need help

Fall dropped calves in herds being wintered on dry grass and cake are likely to be in need of supplemental feeding. If green, supplemental winter pasture is available, it is possible that creep-feeding will not pay unless there are plans to sell the stock as U.S. Prime or Choice slaughter calves (2).

Creep feeding is usually recommended in purebred cattle herds. The breeder is interested in maximum growth and development which is assured by supplemental feeding (2).

He cannot afford to not creep-feed his calves because breeding cattle must be well grown—show the ability to utilize feed and to fatten. Creep-feeding makes the calf deeper, wider and in general beefier (1 & 7).

A survey of literature reveals that weight gains of creep-fed calves as compared to those calves not creep-fed ranged from a low of eleven to a high of 134 pounds more weight at weaning; and the non-creep-fed calves took from two to 70 days more of feeding to reach approximately the same slaughter weight and grade as the creep-fed calves.

Up to 85 lbs. extra gain

In another phase of the experimentations, the creep-fed and non-creep-fed calves were placed in feedlot to determine weight gain value as feeders to yearling weights. In this phase the literature shows a weight gain advantage for the creep-fed animals of 13 to 85 pounds; it took non-creep-fed animals from 14 to 70 days longer feeding period to finish out at approximately the same slaughter grade and weight.

On the weight gain basis with production of finished yearlings, creep-feeding before weaning has been demonstrated to improve weight gains (10). Stockmen point out that since calves are already on creep-feeding, they experience little if any difficulty at weaning time (4).

In another test, "two-way" heifers and steers were fed after weaning and resulted in higher gains for creep-fed calves. Or, where steers were sold as feeders and heifers were sold as slaughter calves, the weight gain advantage was with the animals that were creep-fed (5 & 13).

Calves wean earlier

Cows generally exhibit better fleshing when calves are creep-fed because calves do not suckle down their dams as severely (15); creep-fed calves show a tendency to wean themselves earlier; a rest period is provided the cow when her calf is weaned in seven to nine months (4).

Calves on creep feed are in better condition developing: more size; less shrink at weaning (15); better conformation and uniformity, especially as first calves out of heifers (9); better growth and gains in years of poor pasture and native grass stands; and are better able to compete with twin calf (2, 4, 9 & 16).

Under the Kentucky Cow and Calf Plan good advice to the beginner is—**whenever in doubt, creep feed** (9).

Nine points to consider

Some of the essentials of creep-feeding that stockmen usually consider before beginning the practice of producing lightweight slaughter beef at weaning time are:

Calves must be of good beef type so they will fatten when young (4).

The cows must be wintered well to raise a high percentage of calves and to nurse them properly (4).

Calves should be early so that they may be taught to eat grain before they go to grass with their mothers. Late fall, winter or early spring calves are desirable (4).

Many successful operators like to get their calves from November to February. Early calves have the advantage of receiving more milk.

Calves should be of uniform age. By getting the calves on the ground at or near the same time, you get a uniform group of calves as far as age is concerned. To do this the bull must be controlled. If all calves can be dropped within a 90-day period, they can generally be marketed together (4).

Salt often will assist to attract cows to certain locations (4).

It is necessary to remember that calves should not only be given the privilege of eating, but that they need to be persuaded to eat by the convenient location of feeders containing a palatable ration (4).

Calves may be marketed at weaning time or shut up for a short drylot feed (4).

Calves dropped in fall can be weaned at seven to nine months of age. Calves handled in this manner can be finished in the drylot and marketed on the fall and early winter market which is usually the seasonal high for this class of cattle (4).

(Continued on next page)

Limitations are few

There are some limitations to creep-feeding and these should be considered before getting into the creep-feeding program.

1. Extra equipment and labor is required (8).

2. It is sometimes difficult to get calves to eat (8).

3. Hogs, sheep or goats cannot run in the same pasture where creep-feeders are located (8).

4. Creep-fed calves sometimes do not sell to advantage as feeders if carrying too much finish (8).

5. There may not be enough spread in prices of grades to justify creep-feeding (8).

6. Pastures larger than two sections, except under large range operations, may not be adaptable to creep-feeding (8).

Advantages are many

Some advantages of creep-feeding include:

1. It adds weight to creep-fed calves (4). Depending upon the condition of pasture, each 100 pounds of gain should be achieved from 200 to 500 pounds of feed.

2. It adds finish. The degree of finish depends on the type and amount of ration furnished and consumed (4).

3. Calves grow out more uniformly in size and condition (8).

4. It saves shrink at weaning, as there is less radical change in switching calves over to drylot feeding (4).

5. It permits earlier marketing as drylot feeding period is shortened, due to the added finish and weight obtained by weaning time (4).

6. It reduces amount of feed necessary to finish calves to grade (4).

7. It permits heifers to be marketed at a weight when their carcasses are practically as desirable as steers (4).

8. Cows will be in better flesh at weaning time (4).

9. Calves bring more dollars per hundred when they are sold at the seasonal high for finished lightweight calves (4).

Table 1

CREEP-FEEDING BEEF CALVES FROM TWO-YEAR-OLD HEIFERS (135 days) (11)

	Creep-fed*		Not creep-fed	
	Steers	Heifers	Steers	Heifers
Number of calves	14	12	14	13
Average weight per calf (lbs.)				
Initial 6/7/54**	163	170	166	168
Final 10/20/54	423	405	298	315
Gain	260	235	132	147
Average daily gain	1.93	1.74	0.98	1.09
Financial (dollars)				
Appraised price per cwt.				
Slaughter***	15.00	16.50	10.00	10.00
Feeder	20.00	15.00	17.00	14.50
Value per calf****				
Slaughter	61.54	64.81	28.91	30.56
Feeder	82.06	58.92	49.15	44.31
Value per calf minus				
If sold for slaughter	40.16	43.43	28.91	30.56
If sold as feeder	60.68	37.54	49.15	44.31

* Creep-feed was 50% cracked yellow corn, 30% whole oats, 10% cottonseed meal and 10% molasses.

** Calves were allotted on 4/24/54 but since practically no feed was consumed until after the calves were weighed on 6/7/54 the latter date was used for initial weight.

*** Calves which were not creep-fed were in such a condition that if purchased for slaughter they would most likely be boned, and thus appraised at only $10.00 per cwt.

**** Weights were shrunk three per cent.

10. Creep-feeding enables the owner of a cow herd to move his calves before winter so that he is wintering only his cows. Thus, he simplifies his management problems (4).

11. Earlier finishing of weaned calves, or a shorter term feeding to yearling weights, means time saved. And time saved frequently means money saved. It does mean a shorter risk exposure to disease, to injuries, to weather, to market changes and a shorter period in which to charge off interest on investment.

12. Calves creep-fed usually sell for a higher price than calves not creep-fed (8).

A creep restricts the cow

A creep-feeder is a feeder to which access is selectively controlled. The creep keeps cows away from, and permits calves access to, the creep-ration.

The creep may be constructed with wire, poles, lumber or pipe. It should be strongly built, regardless of material used. Size of creep will vary according to number of calves and size of feeder used (8).

Type of creep is not particularly important. Several types are successful and may be adapted to materials available for construction. Also custom made creep-feeders are available (2 & 7).

An alternative method, less commonly used, consists of allowing calves to run with cows during the day, but keeping calves separated during the night in an enclosure where supplemental feed is available (2). This method requires additional labor.

If creep-feeder is of the old type, fence or corral around feeder should be at least 10 feet from all sides of the feeder (4). Make several openings in the fence by setting posts 18 inches apart and bracing these posts to prevent cows from crowding them apart. This space will allow a 600-pound calf to enter. Calves prefer to slip between posts rather than bend their backs to get under a low board, wire or pipe (4).

Use covered, double access feeders

Feeders may be of several types. Self-feeders are covered and constructed to allow calves to feed from both sides, and others which feed from one side, only, also may be used. They should be built large enough to hold about five days' supply of feed, thus reducing labor, yet supplying fresh feed. Open troughs may be used but do not have the advantages of covered self-feeders (8).

Feeders with feed trough on one side will permit placing feeder against one side of the creep. By doing this, the self-feeder can be filled from outside the creep. It may be raised or lowered by placing various sizes of blocks or logs underneath the floor. A feeder of about 16 feet long, holding approximately three tons of feed, is designed to care for about 80 calves. Construction plans for creep-feeders can generally be obtained from county agricultural agents, state agricultural colleges, or feed manufacturers.

Some feeders, or creep-feeder combinations, are mounted on skids to permit moving to different sections or to different pastures (4).

To prevent feed waste, build the self-feeder with wide, overhanging eaves to keep out rain. The throat of the grain or pellet opening should be adjusted so that only a little feed comes out as the calves eat. A variation of one to four inches in the opening is required to handle whole grain or pellets. A self-feeder ten feet long will handle 30 to 40 calves.

Ideal locations of creep-feeders are in loafing areas (2) or in places near shade, water, salt and minerals. Almost any place where cows are attracted one or more times daily is satisfactory (8). In warm weather loafing areas may be where there is shade (2) or on a breezy knoll during the hot part of summer. If there is only one watering place cows usually will rest near it. If there are several watering places, it may be necessary to use several creep-feeders (4). Large pastures with several watering places are not suitable for creep-feeding; calves will not leave their mothers for even the most palatable creep ration (2).

Getting calves into the creep requires patience and time. A small number of calves may be separated from their dams and placed in the creep. When they have learned to eat, they will act as decoys for the rest of the calves. It is a good idea to confine in the creep an older animal accustomed to eating. This animal also serves as a decoy. It sometimes helps to scatter a little of the ration near openings on the pasture side so that cows may teach calves to eat. Then more feed placed beyond reach in the pen will entice calves into the enclosure. Once inside, they should find feed at all times. Fresh, clean feed in this early period is essential. Another practice allows both cows and calves access to the creep feed for a few days. Feeds should be limited during this period, and after a week cows may be excluded from pens (8).

Feed mother cows a little for a few days to encourage them to stay near the creep. Calves will start eating sooner. Even if it is a difficult job they will finally eat if your patience holds out (16).

Rules for starting

Calves may be started on creep when three or four weeks of age. Some feed each day, others place several days' feed supply in creep at a time (16).

When you rotate pastures, paint feeder white so calves will find it easier (16).

Never let feeder become empty as calves will get hungry, and when feeder is filled they will eat too much and go off-feed. Never change the kind of feed suddenly. Reduce the amount and hand-feed calves for a few days when they are changed from pasture creep-feeder to drylot full feed at weaning time; otherwise, they will be nervous and over-eat (4).

Also, a creep-ration must be placed in the creep periodically in order that the ration does not become damp, moldy and, therefore, unpalatable. This is especially true at the beginning of the creep-feeding period when grass is still lush and milk production of dams is still great enough so that calves will consume very little of the creep ration. As pasture lushness decreases, milk flow of the dam correspondingly decreases and calves will begin to consume a greater quantity of creep-ration. During July, spring dropped calves may only consume one-half to one pound of ration per day. However, during August, September and October, calves will consume from four to six pounds of creep-ration per head daily.

Table 2

USE OF ANTIBIOTICS IN CREEP RATIONS, AN AVERAGE OF FIVE RANCH TRIALS* (18)

	Control** Creep Ration	Creep Ration with** Terramycin
No. calves	206	457
Av. no. creep days	83.8	95.4
Av. initial wt.	285.4	299.6
Av. final wt.	440.6	488.4
Av. gain	155.0	188.8
Av. daily gain	1.85	1.98
Per cent increase of av. da. gain		7.038
Av. feed intake per head	403	382
Av. daily feed intake per head	4.626	4.112
Feed per pound of gain	2.538	2.074
Feed cost per pound gain in $	.0752	.0645
Value of gain in $	40.37	49.00
Cost of gain in $	11.82	11.86
Net profit on gain in $	28.56	37.14

* Results of combined trials: Davis creep trial, 1957, Akron, Colorado; Chester Chiles creep trial, 1957, Pocasset, Oklahoma; Dewey Truitt creep trial, 1957, Carnegie, Oklahoma; Redmond Sears creep trial, 1957, Merriman, Nebraska; Floyd Casement creep trial, 1957, Sedan, Kansas.

** Initial creep feed with 50 grams Terramycin per ton and 30 grams during the latter half of the creep trial. Control ration price ranged from $53.88 to $67.60, or an average of $60.98 per ton; Terramycin ration cost ranges from $57.88 to $72.60 per ton, or an average of $63.37 per ton. Note: In the Redmond Sears creep trial, 20 head from the Terramycin fed lot sold as Grand Champions of 1957 Chicago Feeder Show at $65.00 per cwt. Another 20 head sold as Grand Champions at the 1958 National Western Stock Show in Denver for $60.00 per cwt. (These show prices were not considered in the selling prices in the above table.)

Calves that are creep-fed usually withstand trucking or railroad stockcar stress conditions to which they are subjected. Not only will they eat prior to shipping, but they will eat at un-

FEED NEAR WATER. Ideal locations for creep feeders are near watering places, in loafing areas or at any location to which cows will be attracted one or more times a day.

TERRAMYCIN INCREASES GAINS. In five ranch trials, adding Terramycin to a creep-feed ration increased gains 7.038% on 0.464 lb. less feed per lb. of gain.

loading, watering, feeding and resting stops while in transit to feedlots or terminal market. When they arrive at the feedlot, the bunk and dry feed is not strange to creep-fed calves and they adjust more readily than non-creep-fed calves. Therefore, creep-fed calves are usually less subject to incidence of shipping fever complex than those calves which have not been creep-fed and have never eaten a mouthful of feed other than grass and milk.

Creep-feeding can be profitable under good management practices and by the use of a nutritionally sound creep-feeding ration.

At present, the recommendation is to add 50 gms. of oxytetracycline (Terramycin) to a ton of creep-ration while calves are consuming one to two pounds daily during the early part of the season. As they begin to consume five to seven pounds per head daily, the ration should contain 25 gm. of oxytetracycline per ton. This necessitates two shipments of creep ration during a creep-feeding season. The second shipment of creep-ration should also be supplemented with a source of vitamin A due to the fact that the pasture becomes dry—less carotene in the forage and vitamin A in milk. The late creep-ration should contain at least 5,000 I.U. of available vitamin A per pound of ration.

Use of antibiotics, stilbestrol and combinations in creep-rations are shown in the three tables. Table 2 compares a creep-ration with and without the broad-spectrum antibiotic, oxytetracycline. Table 3 shows weight and grade advantage from implantation of stilbestrol (17). (The supplemental application provides for a dose of one 12 mg. pellet for suckling calves as approved by the Food and Drug Administration.) Table 4 compares the basal creep-ration, basal plus 5 mg. stilbestrol, and basal plus 5 mg. stilbestrol and 40 mg. oxytetracycline. Calves can be successfully stimulated by the use of stilbestrol, either fed or implanted (17).

The creep-ration should be complete to satisfy the nutritional requirements of rapidly growing calves. Whenever lushness of the grass is lost or diminishing, vitamin A in the supplemental ration becomes important. And vitamin A deficiency becomes a problem under drouth conditions. Regardless of the type of ration, it is also important to supply energy to the calf. Although a high protein ration is not necessary, a ration with 10 to 16 per cent crude protein is considered important for calf growth especially when the dam's milk production drops and pastures become dry. Besides vitamin A, energy and crude protein the growing calf should receive a readily available supply of calcium and phosphorus. This is especially true in areas known to be phosphorus deficient.

Good insurance in those areas where one or more of the micro-elements are lacking, is the supply of trace minerals in creep-feeds. There is no other more critical time in the calf's life when it needs a source of minerals due to the excessive bone and tissue development occurring at an accelerated rate. This accelerated growth-rate takes place during the first eight to 10 months of the calf's life.

Calves will accept whole grain or pellets more readily than they do a meal. And, molasses has been found very palatable to calves.

Table 3

EFFECT OF IMPLANTING SUCKLING STEER CALVES AT 3½ MONTHS OF AGE ON WEANING WEIGHTS, GRADE AND SUBSEQUENT FEEDLOT PERFORMANCE (17)

	Control	Stilbestrol Implants
PREWEANING PERFORMANCE		
No. calves	12	12
Av. age when implanted, days	103	100
Av. age at weaning, days	210	207
Gain, implanting to weaning, lbs.	200	231
Feeder grade at weaning	B to B—	B+
Cost of implanting per calf $		0.40
Value of implanting at 20c per lb., $		5.80
SUBSEQUENT FEEDLOT PERFORMANCE*		
Av. daily gain, lbs.	2.52	2.54
Appraised value per cwt. at completion of feed trials, $	22.25	22.25
Net return over cost of steer and feed, $	24.79	25.35

* One half of the calves in each lot received 10 mg. stilbestrol in the daily ration.

Table 4

EFFECT OF ADDING 5 MG. STILBESTROL OR 5 MG. STILBESTROL PLUS 40 MG. TERRAMYCIN TO CREEP-FED CALVES (last 47 days on test) (5)

	Basal Creep Feed	Basal plus 5 Mg. Stilbestrol per calf	Basal plus 5 Mg. Stilbestrol plus 40 Mg. Terramycin
No. calves per group*	15	15	15
Av. Calf weights (lb.)			
Initial, 4/19	470	473	470
Final, 5/5	563	572	578
Av. daily gain	1.97	2.10	2.30
Creep-feed consumed per calf** (lb.)	254	207	229
Creep-feed/cwt. gain (lb.)	273	209	212
Slaughter data***			
Yield, per cent	57.0	57.7	57.1
Carcass grade	Good +	Good + to Choice —	Good + to Choice —
Marbling score	3.47	2.97	3.32
Financial results ($)			
Av. cow and calf feed cost****	67.28	66.36	66.82
Market value per cwt.*****	19.54	19.57	19.23
Total value per calf	110.01	111.92	111.15
Net return per calf	42.73	45.56	44.33
Difference over controls		2.83	1.60

* Nine steer calves and six heifers per group, five calves in each group each lot of original treatment.
** Concerns only amount during this phase.
*** Yield based on hot carcass weight shrunk 2½% (hide off).
**** Costs prior to this phase based on average for original lots.
***** Based on current value of carcass according to grade and final Ft. Reno wt.
Marbling score: 1 equals abundant, 3 equals moderate, and 5 equals very slight.

For additional copies of this article, write to AGRAData, Agricultural Research & Development Department, Terre Haute, Ind.

Table 5

30% CREEP SUPPLEMENT FOR CALVES RECEIVING GRAIN*

Ingredient	Lbs/ton
Soybean oil meal (44%)	800
Linseed oil meal (34%)	462
Dehydrated alfalfa meal (17%)	240
Wheat standard midds (16%)	200
Molasses (3%) (Cane)	150
Iodized salt	40
Trace mineral premix	4
Dicalcium phosphate	60
Calcium carbonate	30
Terramycin (TM-10)**	8
Vitamin D_2	2
Vitamin A palmitate in gelatin (A-5)***	4
Total	2000

* Suggest 3/16 in. or 3/8 in. pellets be mixed with farmer's grain in order that each calf receives ½ pound per head per day. This should be increased to one pound per head per day when calves start consuming more feed at latter half of creep feeding period.
** Supplies 80 g./ton or 40 mgs. per pound of supplement.
*** Supplies 4,540 U.S.P. units of vitamin A per pound of supplement from synthetic source.

Table 6

COMPLETE CALF CREEP RATION

Ingredient	Creep-feed for slaughter Lbs./ton	Creep-feed for stocker-feeder Lbs./ton
Ground corn	1126	776
Ground oats	300	500
Dehydrated alfalfa meal (17%)	150	200
Wheat midds (16%)	100	200
Soybean oil meal (44%)	50	50
Linseed oil meal (34%)	50	50
Molasses (3%)	150	150
Iodized salt	20	20
Trace mineral premix	2	2
Dicalcium phosphate	30	30
Calcium carbonate	15	15
Vitamin A palmitate in gelatin (A-5)*	2	2
Terramycin (TM-10)**	4	4
Vitamin D_2	1	1
Total	2000	2000

* Supplies 2,270 U.S.P. units vitamin A per pound from synthetic sources.
** Supplies 40 grams per ton or 20 milligrams per pound of Terramycin.

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AIR TOUR—Several of the 46 businessmen and farmers who were recently guests of Honeggers' & Co., Inc., Fairbury and Forrest, Ill., on a 30-hour flying tour of the company operations in Illinois, Iowa and Nebraska are shown as they arrived at Taylorville, Ill., one of the four tour stops. They are each being presented with a red and white striped carnation by "Miss Taylorville" —Marie Cachera. Shown are (left to right): Sam Kennedy, vice president and general manager of Honeggers' metal products plant at Taylorville; Don Rogers, Feedstuffs, Chicago; Harry Campbell, WLS farm editor, Chicago; Myron Boyd, Production Credit Assn. manager, Pontiac, Ill.; Harold G. Dickey, Honeggers' advertising manager; Miss Cachera, and Don Pettinger, president of the Taylorville Junior Chamber of Commerce.

Honeggers' Sponsors Flying Tour of Plants

FAIRBURY, ILL.—A group of 46 businessmen and farmers were guests recently of Honeggers' & Co., Inc., Fairbury and Forrest, Ill., on a 30-hour flying tour of company operations in Illinois, Iowa and Nebraska.

Purpose of the tour was to better acquaint the group with the company's growth and expansion program, according to E. F. Dickey, executive vice president and general manager of the firm.

Delegations of civic, business and agricultural leaders met with the visitors at each of four stops. One of the highlights of the flying tour was the stop at Lincoln, Neb., site of Honeggers' most recently acquired feed mill.

The group also visited Honegger operations in Indianola, location of Honeggers' Iowa feed mill, and Onawa, Iowa, home of Honeggers' prefab building operations. At Taylorville, Ill., they inspected Honeggers' metal products plant where Big "H" livestock and poultry metal equipment is manufactured.

Hosts to the tour were Sam and Frank Honegger, company president and vice president, respectively, and Dr. George Godfrey, vice president and executive director of Honegger Breeder Hatchery, assisted by several executives who doubled as pilots. These included Mr. Dickey, and vice presidents Erwin Wascher, Elmer Roth and Ray Steele.

Harry Campbell, Chicago, radio (WLS) farm editor, and a Fairbury "flying farmer" flew their own planes. Two Honegger staff pilots and three Peoria and Champaign, Ill., aviators were employed to complete the staff of 11 pilots.

Harry Thomsett Dies

VANCOUVER — A. Harry Thomsett, one of the best known grain brokers operating on the floor of the Vancouver Grain Exchange, died unexpectedly following a heart attack. Mr. Thomsett operated as a grain broker before World War II and after serving during the war with the Wartime Prices and Trade Board, returned to the grain exchange floor. He suffered a mild heart attack two years ago. He is survived by his wife and family.

Employees Honored

MINNEAPOLIS — Chase Bag Co., Minneapolis, honored its plant and office employees who have been with the firm 10 years or more Nov. 14 with a banquet at the Normandy Hotel. There are 85 employees in the group. The firm gave special honors to 55 employees who have been with the company 25 years or more.

Use of Cottonseed Meal in Layer Feed Brings Price Rise

MEMPHIS, TENN.—The increase in the market value of prepress solvent cottonseed oil meals used in layer feeds in the West Coast area emphasizes the value of research, according to officials of the National Cottonseed Products Assn., Inc., Memphis. The price of these meals has increased about $4 a ton in recent months.

It is estimated that since last April about 45,000 tons of such meal have been marketed for feeds, and that at least 200,000 tons annually will be used in the future, providing it continues satisfactory, the NCPA officials said.

This new market for cottonseed oil meal was made possible by the findings of the NCPA-supported research at the University of California, the officials pointed out. They said the gross return to oil mills is already 10 times the cost of the association's research.

The NCPA research committee continues to sponsor further research on the effect of gossypol upon egg yolk discoloration. The objectives of such work are to make possible the unrestricted use of all types of cottonseed oil meal in laying rations and to avoid feeding errors which could cause serious delay in the development of this market.

Current research includes the collaborative testing of analytical methods developed at the University of California. Doing the testing are research workers at U.S. Department of Agriculture laboratories, experiment stations and commercial feed companies. Results of these tests should be available early in 1959, a NCPA spokesman said.

In addition, the NCPA has provided a fellowship at the Southern Regional Research Laboratory to develop more practical analytical methods and processing techniques to produce improved oil meals.

Boston Firm Appointed Distributor for Drew

NEW YORK—New England By-Products Corp., Boston, has been appointed a distributor for the agricultural division of E. F. Drew & Co., Inc., New York. The Boston firm will handle NRG-50 all-vegetable fat and associated products, according to J. M. Hagerty, Drew agricultural division sales manager.

He said the New England firm will represent Drew in the New England states, New York, Ohio and Michigan.

New N.C. Soybean Processing Plant Starts Production

SELMA, N.C.—The new Selma Soybean Corp. recently started the processing of soybeans into soybean meal, soybean mill feed and soybean oil.

Corporation assets are now valued at $125,000, with the majority of the capital invested by the four officers of the firm—Floyd C. Price, Jr., president; A. L. Perry, first vice president; A. Z. Thompson, Jr., second vice president, and R. G. Gurley, manager and secretary-treasurer. Mr. Gurley is president of the Gurley Milling Co. in Selma, and has played a major part in organizing the new soybean corporation.

Mr. Gurley purchased the equipment for the operation from a Glidden Co. soybean plant in California, and had it moved to Selma. Construction of the new plant was started early this year.

The entire operation is located on a seven-acre tract adjacent to the Gurley Milling Co. The building units are spaced for future expansion, as well as for fire protection. A total of 85 motors generating 650 hp. furnishes the power. The equipment can be operated from a central control room. Storage facilities for 200,000 bu. are available.

Plans for the first year of operation call for three shifts of employees to keep the plant operating 24 hours a day processing a million bushels of soybeans into meal, oil, etc. The beans will be purchased in North Carolina, South Carolina and Virginia. The solvent extraction method is employed in the processing.

Mr. Price points out that a ready market is available for the plant's production. The meal and mill feed will be used for feeding poultry and livestock, and for re-sale to feed mills.

Building construction was done by N. Hunt Moore, Memphis, consulting engineer; Carl A. Williamson, Princeton, N.C., who laid the foundation, and H. F. Holt, Wilson, N.C., architect and engineer.

Likes Fire Engines

HARTFORD, WIS.—A 15-year-old boy who said he "likes to see fire engines running up and down the street" admitted setting fire to a pile of bags in the seed cleaning department of the Hartford Elevator recently. The fire, which occurred about a half hour before closing time, was noticed by a passerby walking through an alley behind the building. Damages were estimated at "about $100."

The new Columbian "Mix-O-Matic" bulk feed storage tank as it was on demonstration at the recent Feed Production School in Kansas City.

Columbian Announces "Mix-O-Matic" Tank

KANSAS CITY—A new self-contained bulk feed storage tank, including an internal auger for elevating or mixing, has been announced by the Columbian Steel Tank Co., Kansas City.

The new unit, called the "Mix-O-Matic" bulk tank, was first announced and demonstrated at the recent Feed Production School in Kansas City. The tank is designed primarily for farm use.

Columbian engineers pointed out that the unit eliminates the structural steel requirements for gravity discharge. The internal auger raises the feed, which then is spouted out by gravity into feeders or feed buggy. Also, they noted, there is bottom loading so that any truck can load feed into the ground level hopper, from where the feed is moved by the horizontal and vertical augers with a low horsepower requirement.

The engineers said that the internal auger permits mixing while the tank is being filled, helping to prevent concentrates from settling out; helps to prevent bridging of feeds; can be used to mix concentrate and grain; and can be used to remix material if there is a tendency toward separation. Ground-level controls, the engineers said, are conveniently located for control of loading and mixing or unloading with the 6-in. auger.

Clyde C. Meinhoefer — Robert C. Fulton — James G. Meier

ADM APPOINTMENTS—New officials in the feed and alfalfa divisions of Archer-Daniels-Midland Co., Minneapolis, were named recently. (Feedstuffs, Nov. 15.) They are Clyde C. Meinhoefer, assistant vice president and formerly assistant to the president, who was named manager of the feed division; Robert C. Fulton, formerly production manager of the alfalfa division, named manager of the alfalfa division, and James G. Meier, formerly assistant manager of the ADM isolated soy protein and soybean extraction operations at Evendale, Ohio, who was named manager of the plant. Mr. Meinhoefer succeeds John H. Daniels, who recently was named president of the firm. Mr. Fulton succeeds Richard Brierley, newly elected executive vice president of ADM, who formerly was a vice president and manager of the company's alfalfa division. Mr. Brierley was also manager of the Evendale plant. He is succeeded by Mr. Meier in this capacity.

Southern Feed Firm Offers "Royal" Welcome to Visitors

By George H. Watson
Feedstuffs Special Writer

The story of the service of Cosby-Hodges Milling Co., Birmingham, Ala., to southern agriculture is now being told in a unique program being conducted under the personal direction of J. Chapline Hodges, chairman of the board of the firm.

The company's own airplane is being used to bring in small groups to see the concern's push button mill and to hear the story of its service from Mr. Hodges. These groups come from the concern's trade area which includes Alabama, Mississippi, Georgia, and west Florida. The visitors include dairymen, poultry raisers and cattlemen. They are usually accompanied by the concern's branch managers in other cities.

These visitors are picked up at their nearest airports and usually are flown over their own farms before the plane sets out for Birmingham. When they arrive at the plant, badges are placed on the lapels of the visitors and their pictures are taken. They are served refreshments and then are comfortably seated in the office of Mr. Hodges.

After this introduction, the visitors are shown through the plant.

Visit Poultry Section

After going through the main plant, the visitors are shown the demonstration poultry or "egg producing" plant. This includes the cage layer section where 1,008 hens are being fed on eight experimental rations and records kept of their production. This also serves to demonstrate a prefabricated type of chicken house, 28 by 120 ft., which can be supplied at a cost of $1,713 to the farmer by arrangement with a Montevallo, Ala., concern.

The demonstration also includes another chicken house with slatted floors and one with conventional straw nests. The concern also has a flock of Honegger chickens.

Visitors are also shown the egg plant where eggs are packed in individual cartons for Kroger, Hill and other grocery firms in the South. In this plant the eggs are washed, candled, graded and packed by machine. The company will take the egg production of any of its feed customers, but the customers are encouraged to sell eggs elsewhere if they so desire. Cold storage is provided for the eggs until they can be put through the carton plant.

Each group of visitors hears from Mr. Hodges the history of the firm and what it has done and is doing to serve agriculture in the South.

History

The firm was founded in 1886 by the late W. M. Cosby primarily to sell horse feed. When Mr. Hodges came into the firm in 1911, his job was to call on livery stables, coal mines and transfer companies.

A line of chicken feeds was added later, after some hesitation, Mr. Hodges said, because of the opinion of many that there was no market for eggs and chickens. This occurred at about the time the jazz age was coming to its heights, and Mr. Hodges selected the name "Jazz" for the firm's new line of feed.

With a new line of feed developed, Mr. Hodges began to promote the expansion of chickens and livestock production in the area. To sell more feeds, Mr. Hodges found that he had to promote a better market for the products of the southern farm. He made calls on chain grocers, urging them to buy local eggs instead of those shipped in. At first, the firms refused on the basis that they could not get a steady supply of graded eggs, or that the meat was not up to western standards. Cosby-Hodges Milling Co. then went into the egg grading and packing business to show that it could be done on a business-like basis in the South.

Pointing out his firm as a market for the products of southern agriculture, Mr. Hodges tells the visitors that some 200 trucks unload at his mill each week. He also tells them about how the feed is packaged and shipped out over the South.

Champion for South

Those who visit with the feed manufacturer claim that a few minutes of conversation with him makes one a great believer in the South. Mr. Hodges sees it as "a Garden of Eden just beginning to bloom." He also has a dream of great expansion for the milling firm on its 40-acre site. There is plenty of room for expansion, he says, and the mill was built with expansion in mind. He also has dreams of a private landing strip and an auditorium for 4-H meetings and similar gatherings.

COSBY-HODGES WELCOMES VISITORS — Customers of Cosby-Hodges Milling Co., Birmingham, Ala., get royal treatment from the firm when they pay it a visit. The firm will fly visitors to Birmingham in its own plane, serve them refreshments, give them a tour of the plant and a visit with J. Chapline Hodges, chairman of the board of the firm. In the first picture a group of visitors is shown with company officials. Shown (left to right) are: Front row—Mrs. Emmet C. Gaston, Grand Bay, Ala.; Mr. Hodges, and Mrs. John D. Sherrill, Biloxi, Miss. Back row—Grover Mallani, vice president and sales manager, Mobile, Ala., branch of Cosby-Hodges; Mr. Sherrill; W. Cosby Hodges, president of the feed firm, and Mr. Gaston. In the second picture is a view of the plant showing a sign which advertises the firm as the "South's most inspected feed mill."

POULTRY AWARD—Winner of the Poultry Tribune award for the highest three-year (1955-58) average in the Western New York Random Sample Test was the Babcock Poultry Farm, Inc., Ithaca, N.Y. Milton C. Dunk (left), Poultry Tribune editor, presents the trophy to Bruce Babcock, owner of the Babcock franchise hatchery at Lititz, Pa., and J. C. Huttar, sales manager of the firm's hatchery at Ithaca, N.Y., at the recent Northeastern Poultry Producers Council (NEPPCO) show in Harrisburg, Pa. The Babcock entry of White Leghorns had an average income of $4.11 over feed and chick cost per net chick started. The firm also won the 1957 three-year award.

Feed Laboratory . . . Necessity or Showplace?

A modern laboratory makes an impressive stop on any plant tour, adds to company prestige, marks you as a progressive firm. More and more, management is recognizing the intangible "showplace" value of a laboratory.

But certainly a laboratory could never be justified on this basis alone. First and foremost, a feed laboratory must be able to pay its own way in savings. How can a laboratory do this? There are several ways. For instance, it has been estimated that accurate, in-plant determination of the protein content of ingredients . . . at the time of mixing . . . can save from $1 to $2 a ton on the cost of finished feeds. There is a point in the growth of a feed mill when a laboratory becomes an economic necessity. Perhaps your mill has reached that point. Maybe you've passed it. Why not investigate today. With only a brief description of your operations, we can supply you a quotation on all of the apparatus, equipment and furniture required for a modern feed laboratory for your mill. No cost, no obligation and it could mean important savings for you. We offer a complete service, from planning through manufacturing, plus assistance in installation when required.

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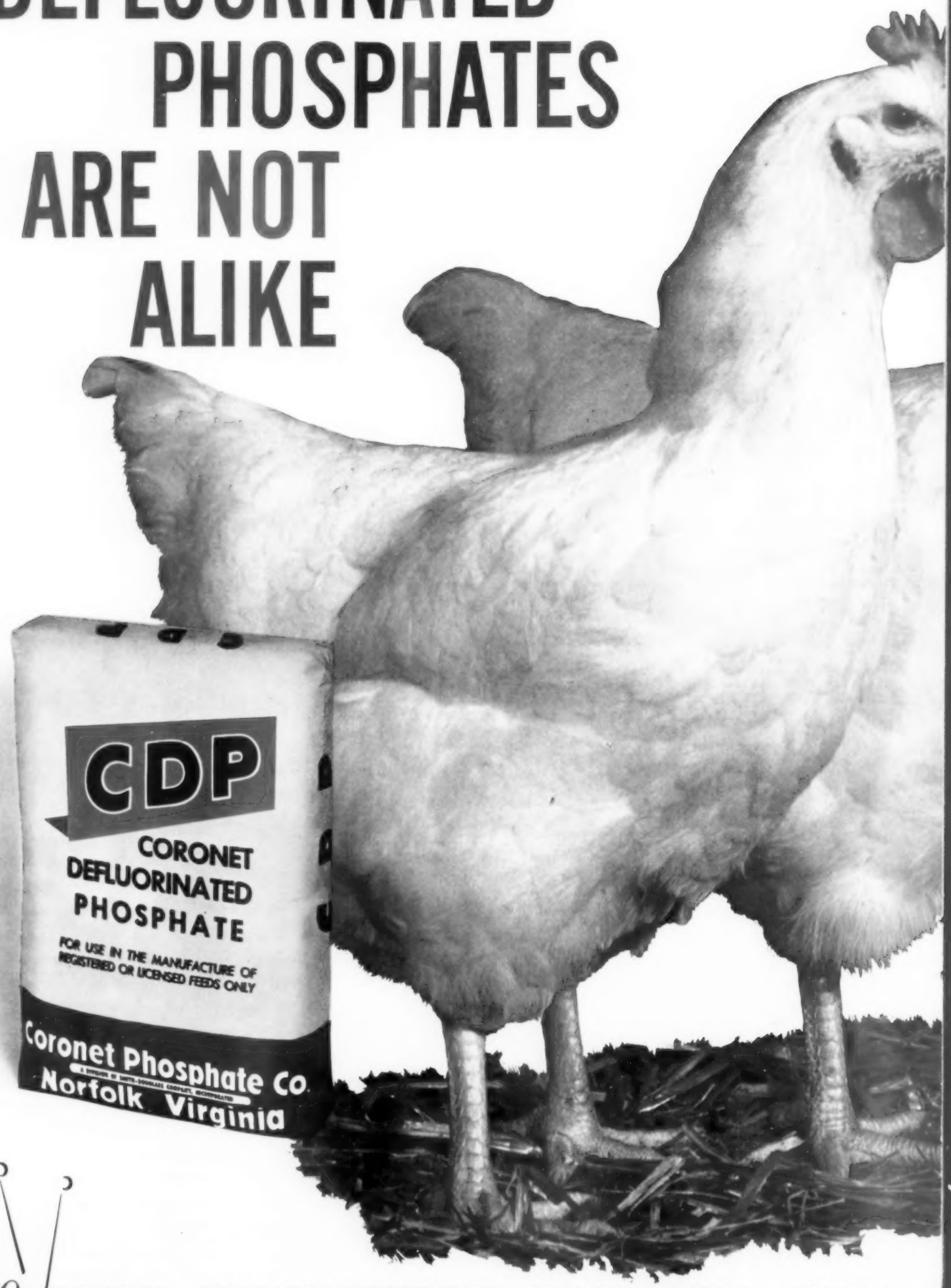

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Nutritionally, CDP is a tried and tested source of phosphorus, palatable to livestock even in free-choice feeding. ALL of the phosphorus in CDP has demonstrated total biological availability to both plant (rumen bacterial micro-organisms) and animal life. Nutritional evidence establishing CDP as the BEST defluorinated phosphate is contained in the following literature:

1. "The Availability of Phosphorus from Different Sources for Poults Fed Purified Diets." Poultry Science, Volume XXXIII, Number 5, September, 1954.
2. "A Comparison of the Availability, to the Young Growing Chicken, of the Phosphorus in Defluorinated Phosphate and Analytical Reagent Grade Dicalcium Phosphate," by Lime Crest Research Laboratory, October, 1954.
3. "The Availability of Phosphorus from Different Sources for Poults Fed Practical-Type Diets." Poultry Science, Volume XXXIV, Number 5, September, 1955.
4. "Phosphorus Availabilities as Determined by New Feeding Experiment," by Lime Crest Research Laboratory, November, 1955.
5. "Phosphorus Availability Assays by the University of Illinois Method," (as presented by Dr. H. H. Scott) by the Laboratory of Vitamin Technology, Inc., September, 1956.

CORONET Defluorinated Phosphate is a direct result of creative development, quality production and CONTINUING RESEARCH. No phosphorus feed products are subjected to more meticulous quality control than those produced by CORONET.

Guaranteed Uniform Analysis

Phosphorus	Calcium	Fluorine
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Solubility Comparison of CDP With Other Defluorinated Phosphates

PRODUCT	Solubility in 0.4% HCl	Solubility in 2% citric acid	Solubility in neutral ammonium citrate	Average total solubility
CDP	100.00%	87.14%	86.16%	91.10%
Product A	96.48%	51.19%	19.41%	55.69%
Product B	82.79%	38.61%	9.08%	43.49%

Chemical solubilities determined by TERMINAL TESTING LABORATORIES, INC., Los Angeles 33, Cal.

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IDEAS TO HELP YOUR CUSTOMERS

Ventilation Values

Laying flocks are more sensitive to ventilation deficiencies than is commonly understood, say poultry experts. Suitable environment for maximum egg production is possible only when close attention is paid to this ventilation situation.

If the ventilation is properly designed and installed, it will (1) keep the litter dry; (2) prevent moisture and frost from collecting on the walls and ceiling; (3) prevent sudden temperature changes; (4) eliminate drafts; (5) provide maximum air movement in warm weather to reduce the possibility of head prostration; (6) remove ammonia fumes; (7) reduce corrosion and deterioration of the building and equipment; (8) aid in the production of clean eggs, and (9) remove dust.

The optimum temperature range for maximum egg production is 45 degrees F. to 65 degrees F. For economy reasons, it is not always possible to maintain these temperatures, but temperatures below 35 degrees and above 75 degrees should be avoided. Since poultry will not adjust themselves to sudden temperature changes, controlled ventilation with sufficient insulation in the building should be provided to insure maximum protection for the birds.

◆

A Hen's Working Day

Supplemental lighting, from fall through April to keep laying hens on a 14-hour working day, will boost the rate of lay by 15 to 20% over flocks where lights are not used, according to T. E. Hartung, poultry specialist at Colorado State University.

Electric lights can be used in the early morning and late afternoon to provide the required 14 hours, and Mr. Hartung advises one 40-watt electric light bulb for each 200 sq. ft. of floor space. An automatic time clock can be used to regulate the switch.

An alternative plan, which can be used with equal effectiveness, he adds, is the use of all-night lights. With this method, however, the lighting intensity should be reduced. One 15-watt bulb for each 200 sq. ft. is sufficient. The all-night lights should be turned on at dusk, and turned off at dawn.

◇

Attention to Lambs

Giving lambs special care on arrival from a distant shipping point can be a pretty important job for the feeder—especially if he considers the profit angle, cautions L. J. Kortan, South Dakota State College livestock specialist.

He says lambs normally shrink 4 to 10 lb.—depending on shipping conditions, distance and weighing conditions.

The suggestion he makes: The lambs should be placed on feed rapidly, rather than semi-starving them a week or two at the start. Lambs need plenty of protein and energy to keep healthy and get into proper condition for full-feeding.

Tone Feeds Promoted At Dakota Elevators

MINNEAPOLIS — A selling and advertising program to promote the sale of Peavey Feed Mills' Tone Feeds has been initiated at Peavey elevators in northern South Dakota and southern North Dakota.

Announcement of the program was made in the Grainville Bugle, publication of F. H. Peavey & Co., Peavey Feed Mills' parent company in Minneapolis.

Roger Ward, assistant merchandise manager of Peavey elevators, accompanied by R. J. Lindell, Peavey Feed Mills sales manager, recently concluded a trip to stations in the Dakotas to encourage elevator managers to sell Tone Feed and to introduce William Zirbel, new Tone Feed salesman for the district.

To Consolidate Offices

PORTLAND, ORE.—The Portland regional branch of American Cyanamid Co. will move next spring to a new warehouse and office building now under construction. The new building will consolidate branch sales and distributing activities in the Pacific Northwest for seven of the company's subsidiaries.

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NOW! the Mobile Feed Processor with all the Special Features You've Wanted for More Profitable Milling!

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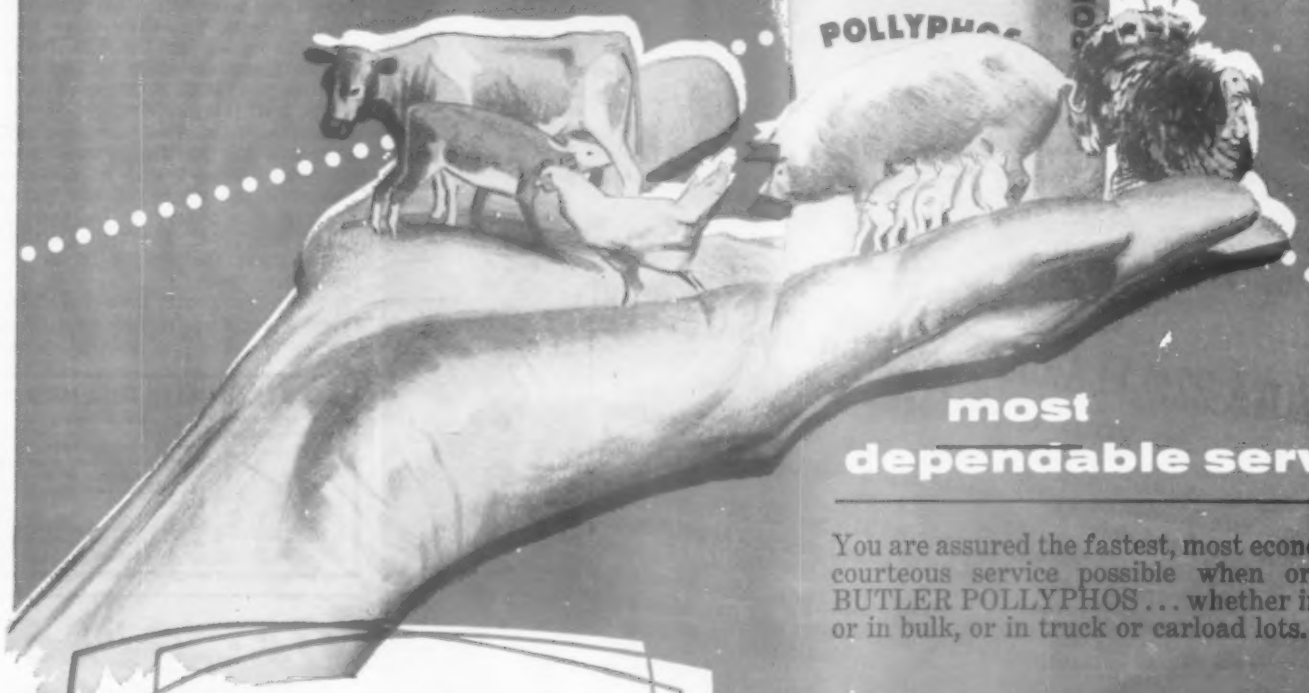

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JOE BROOKS

BY AL P. NELSON

Promote and You Sell More

The late fall rain was pouring down as Pete Stacy sat in his warm kitchen drinking coffee and eating apple pie at his mid-morning lunch.

"Ma," said Pete, "the farmer has it pretty nice once in a while. He can come into the house and get a mid-morning lunch—if his wife isn't too crabby—and nobody docks him pay for it. And on rainy days he can still get barn chores done, some perhaps, he has put off when the field work called."

His wife, a heavy-set woman with a knot of black hair high on her head turned. "Since when am I ever crabby to you, Pete Stacy? You know very well I don't put my foot down on your silly notions except when I'm real riled. And I'm gettin' that way now."

"Hold on, dear," grinned Pete. "I was only kiddin'. You take things too serious. I know I've got the most pleasant wife in the state and one of the best cooks."

"Only ONE of the best cooks?" asked his wife, stirring soup.

"Well," shrugged Pete, "the BEST then."

"That's better," remarked his wife very, very sweetly. "You are a dear sometimes, Pete."

Pete made a face into his coffee, but said nothing. Just then there was a knock on the door. Pete got up to answer it.

Mike Brandt Arrives

"Hey, come in out of the rain," he called, recognizing Mike Brandt, his neighbor. "You caught me eatin' again."

"Have a cup of coffee with Pete," invited Mrs. Stacy. "And there's apple pie, too."

"Wonderful," grinned Mike. "I like both."

The two men sat down at the comfy kitchen table, while outside the rain beat against the roof and windows with that lonesome, shut-in, yet comfortable, sound.

"I was wondering if you'd let me come into your shop and use your weldin' outfit this morning," Mike Brandt said. "I got some pieces of iron to weld, and I haven't any weldin' equipment like you have. I allus tells my friends you got the best equipped farm repair shop I ever saw."

"Oh, don't praise him so much," put in Mrs. Stacy. "I'm having an awful time keepin' him cut down to size the way it is now."

Stacy chuckled. "Women is women, ain't they? Well, Mike, I am kinda proud of my shop. You bring your stuff right in and get to work whenever you want. And if you get stuck in weldin' jest call me from the barn and I'll help."

"That's very good of you," said Mike. "I appreciate it. Maybe I kin pay you back some way someday."

The men chatted a little more. Then Mike said, "Say, Pete, have you seen all them dairy pictures Joe Brooks has got stuck up all over his salesroom walls?"

"No, I haven't been in there for grinding for about 10 days."

Mike chuckled. "Well, you know that Joe. Once he gets an idea he goes all out figuring it for all it's worth. Seems like he's traveled around a bit takin' pictures of all them dairy promotion signs different states has got. You know those that say: 'Every Adult Should Drink Three Glasses of Milk a Day for Health,' and 'Milk Is Nature's Best Food,' and things like that. I also understand a lot of salesmen got pictures like that for Joe in their travels. Heck, when I was in the mill yesterday the editor of the paper was taking a picture of Joe tacking up another photo and taking notes, too. I guess the story'll be in the paper this week."

"Well, it's about time we dairy farmers get some publicity on what we produce for the public," Stacy

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said. "Everybody else gets advertisin' for what they grow or sell."

Mike Brandt set down his coffee cup. "You know, Pete, I've been thinking the same thing. Us farmers want higher prices for our milk and we bellyache when we can't get them. But, durn it, we do very little to make the public want to drink more milk or use more butter and cheese. We leave it up to the national associations to advertise for us. And their money don't stretch too far."

"Well, what else can we do?"

Mike Brandt frowned. "Well, there oughta be somethin' us farmers could do, one by one. If Joe Brooks can steam up a lot of interest in usin' more milk by posting them signs and get a story in the papers, maybe you and me could do somethin' just as good."

Build a Sign

"You and me?"

Brandt nodded. Even Mrs. Stacy now seemed interested. She had been standing and drinking her coffee. Now she pulled up a chair and sat down with the men.

"Your land adjoins mine," pointed out Brandt. "I'm a good carpenter and you're a good one, too, plus being a fine repair shop expert. Why couldn't you and me build a big billboard advertisin' milk right where our land adjoins? One that would knock out the eyes of everybody travelin' down the road."

"Whew!" ejaculated Stacy. "What an idea! I've got some pine logs I could have the local sawmill saw into some wide boards. That'd cut the costs."

"And I got creosoted posts and lots of two by fours, or I can get some sawed if I have to," put in Brandt.

Stacy chuckled. "Hey, we could build that billboard without too much cost."

"We sure could," said Brandt. "Somebody's got to start this deal. Farmers have got to advertise their own products. If other farmers see what you and I have done, mebbe they'll get off their—their stanchions and put up billboards, too. Good ones, I mean."

Stacy grinned. "You're right, Mike. Here we sit drinkin' coffee instead of hot milk or cocoa. Millions of farmers are drinkin' coffee instead of milk. And which is better for health? At every farmers meetin' they serve coffee, coffee, coffee, or soft drinks—when we have to live off what we get for milk. And we drink competin' products. Man, are we smart."

"I knew you weren't so smart when I married you," commented Mrs. Stacy, with a twinkle in her eye. "But I did it just the same."

Stacy ignored the remark, except for closing his eyes as if in pain. "Mike, I got an idea. Joe Brooks started this milk publicity idea. Now let's ring him into this billboard idea."

Mike Brandt stared. "How?"

Stacy grinned. "Well, you and I both buy an awful lot of feed from him, don't we?"

Brandt nodded. "Sure, but—" he stopped, his eyes puzzled.

"You and I are gonna furnish the posts and lumber for this billboard," continued Stacy, excitedly, "and we are going to build it. Right?"

"Right," echoed Brandt.

"Now, if Joe Brooks is the right kind of a smart business man I think he is, he is going to be willing to have a sign painter—he's got that Smiley Johnson on his staff—letter it up the way we want it, and stand the cost on that department."

"Say, that's an idea."

"And," said Stacy, craftily, "there could be a line of copy on the bottom of the billboard which would say: 'We Know Our Milk Is Good, Because We Use Joe Brooks' Quality Feeds in Our Program'."

Mike Brandt got to his feet. "Gosh, Pete, let's go in and talk with Joe about this idea now."

"Okay," returned Stacy, eagerly. "Mike, maybe we're makin' a mistake bein' farmers. Maybe we oughta hire out to the American Dairy Assn. as promoters for about $15,000 a year."

Mike looked pained. "Oh, I think we'd be worth at least $17,500, wouldn't we?"

"Open the door and let some of this hot air out," Mrs. Stacy remarked, sharply. "When you fellers go in there and daydream with Joe Brooks just pinch yourself once in a while and remember both of you got plenty of cows to milk at 5 p.m. Now get goin' so you can get back on time."

Maple Leaf Earnings Showing Increase

TORONTO—The upward trend in earnings of Maple Leaf Milling Co., which took place in the latter four months of the fiscal year ended July 31, has continued in the first quarter, C. E. Soward, president, stated at the annual meeting of the company.

Net profits for the three months show an encouraging improvement over a year ago, Mr. Soward said. It is neither possible nor prudent to predict the year's results on the basis of three months' operations but, barring unforeseen difficulties, Maple Leaf should do somewhat better this year, he continued. Strong efforts are being made to improve the net return on the sales dollar, which at approximately 1¢ is perhaps the lowest of any industry, Mr. Soward said.

"We cannot be satisfied that we have done a good operating or management job until the return on the sales dollar is at least 2¢," Mr. Soward concluded.

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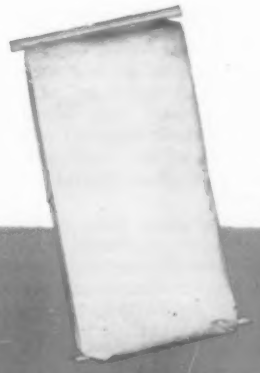

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HESS & CLARK NUTRITION CENTER—Construction is under way on the first unit of a $500,000 nutrition center at Hess & Clark, Inc., Ashland, Ohio. This architect's drawing shows how the completed unit will look. Company officials said the center is to be used for evaluating nutritional aspects of various drugs used for improving livestock and poultry health.

Hess & Clark Begins Work on Expanded Research Facilities

ASHLAND, OHIO—Hess & Clark, Inc., Ashland, has announced the start of construction on an additional research laboratory, the major unit of a $500,000 nutrition research center, according to Richard D. Waters, president.

Mr. Waters said the facilities are needed for evaluation of the nutritional aspects of various drugs used for improving poultry and livestock health.

Expected to be finished by the summer of 1959, the unit will cover 17,000 sq. ft. of floor space, all on one level. Its facilities will include an incubator and diagnostic room, battery poultry starter room, poultry finishing room, broiler and turkey research room, floor pen layer unit, rat control laboratory, egg handling and hold room, feed mixing and storage room, and office facilities for the director and his staff. The completed nutrition research center will also include expanded analytical facilities.

Hess & Clark, founded in 1893, is a subsidiary of Vick Chemical Co. It is one of the country's leading producers of livestock and poultry health products.

Emphasis on research is not new at Hess & Clark, Mr. Waters said, even though its research program has experienced rapid growth and expansion in recent years. "The nutrition research center is one more phase in this growth and another step in the company's long range plan to make increasingly greater contributions to the nation's farmers."

Hess & Clark has done, and is doing, a considerable amount of research on adding drugs to feeds, especially on its nitrofuran product, nf-180, Mr. Waters said.

Since difference in response between two or more compounds is often small, and the true value cannot be measured unless environment factors such as temperature, air circulation, light, etc., are carefully controlled, the new research unit is designed to allow as much control over those elements as humanly possible, he said.

Dr. Paul Harwood, Hess & Clark research director, said work carried out at the new center will involve not only the company nitrofuran products, but antibiotics, hormones, tranquilizers and anthelmintics. The interaction of these various drugs will also be evaluated.

"Even with these extensive new facilities, Hess & Clark's field research activity will be sizeably increased to meet the needs of this expanded program. Information gathered in both screening and practical tests must be verified by agricultural colleges and experiment stations as well as independent commercial testing laboratories. We will now be in a position to show even more positive results and recommended optimum levels when working with these institutions," he declared.

Mill Dust Dangers To Be Illustrated

SEATTLE—The dangers of excess dust in a feed mill will be illustrated by Jack R. McCann, fire chief of the Ralston Purina Co., at the Washington State Feed Assn.'s coming Feed Production School in Bellingham, Wash., Feb. 11-12.

All persons attending the school are invited to bring characteristic samples of feed mill dust to the school, and they can be included as part of Mr. McCann's live demonstration. Actual dust explosions will be created to point out that good housekeeping is an important part of every feed miller's program.

Cargill Builds Soybean Storage Tank in Iowa

FT. DODGE, IOWA—Cargill, Inc., Minneapolis, has completed installation of a 750,000-bu. storage tank at the firm's soybean oil plant in Ft. Dodge.

Wendell J. Wheeler, plant manager, said, "Iowa's soybean crop is estimated at a record 78.9 million bushels this year, nearly twice the 10-year average, and up 8% from last year. Our expansion is a recognition of this upward trend."

The tank is circular, 140 ft. in diameter and 52 ft. high at the sides, with a cone-shaped top 78 ft. high at the peak. Filling and discharging is done by means of a reversible conveyor belt.

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Andrew van der Lyn

NEW OFFICE — Immediate service for its customers and prospects in the New York metropolitan area will be provided by a district office at 380 Madison Ave., the Fuller Co. has announced. The office will be managed by Andrew van der Lyn who was associated with the Pangborn Corp. from 1951 to 1956 as New York district sales engineer, and more recently engaged in the sale and application of equipment of the Day Co., Minneapolis, and the Pittsburgh Lectrodryer Division of McCraw Edison Co. A native New Yorker, Mr. van der Lyn studied mechanical engineering at the Polytechnic Institute of Brooklyn. He participated in the New Jersey governor's conference on air pollution in 1952 and the New York state symposium on industrial ventilation at Columbia University in 1954.

Nichols, Inc., Official Sees Continued Growth

EXETER, N.H.—A look into the past and into the future of Nichols, Inc., Exeter poultry breeding firm, was given by Joseph S. Higgins, general manager, in an address to salaried employees of the firm recently.

The address indicated the changes wrought within the company as a result of the rapid expansion of the broiler industry and the change likely to occur in the future.

"In 1948 we thought we were a big company," he said, "yet every 23 days now, we are doing as much business as we did in all of 1948."

The company foresees another period of major growth ahead of it, he said. The momentum will begin to be felt strongly toward the latter part of next year, and the company in the meantime "must hurry to prepare for this challenge which faces us and the entire broiler industry." The firm has instituted certain organizational changes designed to consolidate its strength and increase its flexibility to meet the challenge, he said.

These changes, according to Mr. Higgins, have included the shifting and reassignment of key personnel, the sale of franchising of certain "sideline" operations and, in some instances, the releasing of a few employees "whose skills and abilities no longer fit the pattern of organization which the company has planned."

Some of the organizational changes have affected Nichols-Northwest, the hatchery at Brunswick, Maine (but not the Coleman research farm there) and a few other facilities throughout the U.S., Mr. Higgins said.

"In Europe," he added, "we are also looking forward to rapid growth. We are sending one of our vice presidents, Richard Stark, and his family, to Germany where he will take up permanent residence and manage our operations in Scotland, England, Germany, France and Switzerland. He will be aided by Sam Allen who will be stationed in Italy. Alvin W. Freelove will continue in charge of South American sales.

"Dr. John Grimes is now our vice president in charge of research, and Wendell P. Clare, Jr., the company's treasurer for the past year, has also been made a vice president.

"Leo Estabrook has been appointed vice president in charge of all domestic sales, and has just completed a comprehensive training program for the company's salesmen. Al Spaulding has been apppointed vice president in charge of all production. The present management group represents basically the reorganizational effort which has been carried out over the preceding months, and which was scheduled for completion by Nov. 15."

GOOD NITROGEN SOURCE

BROOKINGS, S.D. — One ton of poultry droppings contains 100 to 125 lb. of nitrogen, according to a South Dakota State College report.

Names New Director Of Laboratory Work

ST. LOUIS—William V. VanScoyk has been advanced from the position of acting director to director of the analytical laboratory of the Merchants Exchange of St. Louis. He succeeds James M. Lugenbeel who has retired because of ill health. Mr. Lugenbeel headed the laboratory from its organization in 1929 until his retirement.

Mr. VanScoyk is a graduate of the school of chemical engineering at the University of Kansas and served as chief chemist of a nationally known flour mill for more than 20 years. He joined the St. Louis exchange in July, 1957, as chief chemist and was named acting director last April.

Assisting Mr. VanScoyk will be Roy F. Royer, who has been appointed assistant director. Mr. Royer is a graduate of the University of Missouri.

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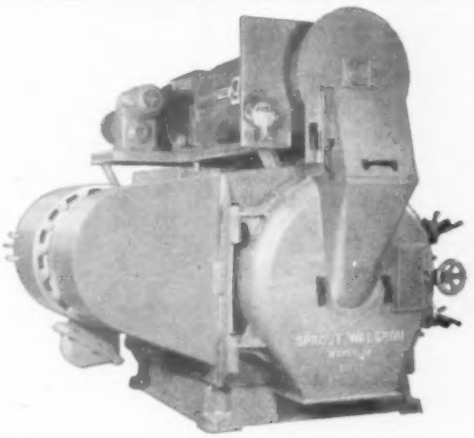
Nothing quite equals the exclusive Sprout-Waldron "Coolaire" which cools and dries pellets automatically, quickly and efficiently with a minimum of fines or dust leakage. The combination of stainless steel construction at all critical parts in contact with moisture laden air, automatic pellet flow control, and hinged louvers for automatic air flow control have made this unit the most popular pellet cooler on the market.

The exclusive hinged louvers are built into the full height of the cooling tower and each louver is independently hinged so that it operates automatically only as required by the amount of pellets in the cooler. Short runs of special formula pellets can thus be efficiently cooled, and in constant production, the first bag of pellets discharged from the cooler will be just as cool as any bag during the middle of the run as well as the last bag of the run.

In addition to being used as a pellet cooler, the S-W Coolaire is being used by producers of steamed rolled oats, barley and similar products as a drier to stop fermentation in bags or holding bins. With a Coolaire, safe sacking can be done after rolling with no holding bins or extra handling necessary. Objectionable steaming or excess moisture in bagged rolled oats is eliminated and the quality is stable even when stored for extended periods.

For further information request Bulletin 119.



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NEW WIDE, WIDE DIE

The new S-W SUPER PELLET ACE, with up to 93% more die holes, produces harder pellets faster, provides longer die life, cuts operating costs and increases production capacity. It offers even more tons per die at lower cost per ton than the world-famous PELLET ACE.

In designing the SUPER ACE all the fine quality features which have made Sprout-Waldron pelleters the most imitated in the industry have been retained. For perfectly controlled feeding, uniform moisture and heat penetration of feed, this mill uses the time-proven stainless steel in-line feeder conditioner used on all Sprout-Waldron Pellet Mills. Special feeder designs for unusual conditions are available on request.

The SUPER ACE features the silent V-belt drive, the original hinged die casing, and the cast-steel revolving die cover with feed-lifting flights which virtually eliminate "plug-ups." The long wearing steel rolls of the SUPER ACE have the exclusive RUFTEX surface.

The Sprout-Waldron SUPER ACE, with its massive, cast iron base and main bearing support offers the same rugged, reliable over-all construction and easy maintenance design for which Sprout-Waldron has become famous.

You'll also find the same S-W customer protection policy, which strives for constant product improvement with maximum concern for owners of current models. Users of the S-W PELLET ACE (1949 and subsequent series) will be able to purchase a special conversion kit which will permit the use of the new wide die and wide rolls which in turn will provide better pellet quality, longer die life and greater capacity, where presently unused horsepower is available.

For complete information on this new SUPER ACE, write for Bulletin 201.

FP/106

WORTH LOOKING INTO

NEW PRODUCTS • NEW SERVICE • NEW LITERATURE

DESCRIPTIONS OF NEW AND IMPROVED PRODUCTS AND SERVICES PROVIDED BY MANUFACTURERS AND SUPPLIERS ARE PRESENTED IN BRIEF FORM. FOR ADDITIONAL INFORMATION, PLEASE USE THE ACCOMPANYING COUPON.

No. 7269—Pneumatic Handling System

Development of a trailer mounted, portable, combination positive and negative pressure pneumatic handling system has been announced by Sprout, Waldron & Co., Inc. The unit,

part of the company's line of Pneu-Pac equipment, has complete portability, an over-all height of less than 8 ft. and an in-line filter with removable filter bag, the company says. The capacity of the unit depends upon the type of material being handled. Check No. 7269 on the coupon and mail to this publication for full details.

No. 7265—Animal Health Product

Pratts P&L Wormer and Pratts Cresylic have been introduced by Pratt Laboratories, Inc., in dealer stores. The wormer is a concentrate of 100% piperazine citrate, equivalent to a 35% piperazine base. It is effective against roundworms in poultry, hogs and calves and ascarides, redworms, strongyles and pinworms in horses, the company claims. Cresylic is a disinfectant to be used for dairy barns, transport carriers and stockyards, the company says. For more information, check No. 7265 on the coupon and mail it to this publication.

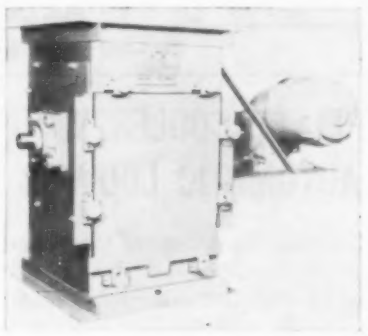
No. 7267—Pneumatic Conveying Bulletin

Publication of a 16-page illustrated bulletin on pneumatic conveying sys-

tems has been announced by The Day Co. The bulletin, the company says, points out how pneumatic conveying systems can reduce plant operating costs and improve plant efficiency. Covered in the bulletin are high and low density conveying systems and equipment. Common installations, basic equipment and accessories are diagrammed and illustrated. For details, check No. 7267 on the coupon, and mail to this publication.

No. 7266—Magnetic Separator Housing

Black iron or stainless steel housings are available for the Eriez Manufacturing Co. non-electric magnetic Rota-Grate, the company announced. According to the company, the new housing facilitates installation wherever an enclosed unit is necessary. The housings are furnished with a



cover panel, secured by latches, for easy access to the Rota-Grate, the company said. When dismounted, the panel fits into a grooved slot under the grate to prevent ferrous particles dropping into the line during cleaning. Check No. 7266 on the coupon and mail to this publication for details.

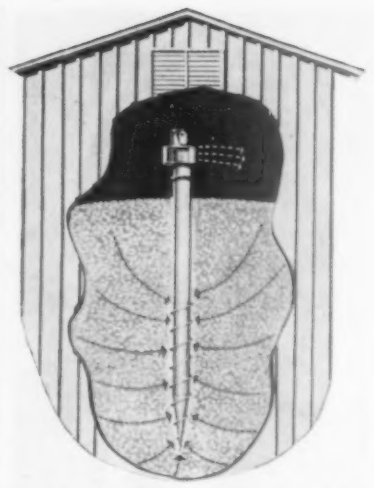
No. 7270—Automatic Typewriter Readout

Automatic control of a typewritten record of weights of individual ingredients as well as batch weights is now offered by the Richardson Scale Co. for use with its "Select-O-Weigh" proportioning systems. Other related information such as time, date and batch number can also be recorded

automatically by this new typewriter readout, the company said. An added feature, the company says, is a column verifier, which is a printed circuit attached to the typewriter carriage which operates through a checking circuit to insure that the data being typed is recorded in the correct columns. For details, check No. 7270 and mail to this publication.

No. 7268—Portable Aeration Unit

Gerber Roto-Flo Co. announces a portable aeration unit. According to the company, the unit can be located



exactly where needed in the storage bins and relocated when necessary. Other features of the unit are: a ¼ h.p. motor of 110 or 220 volts, an inexpensive wiring system utilizing only an extension cord of the usual variety, a heavy duty centrifugal blower and a one-year guarantee against defects. The unit handles from 350 to 500 CFM at .7 Ps, the company says. For complete information, check No. 7268 on the coupon and mail to this publication.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 7235—Grain dockage scale, O. B. Armstrong.

No. 7236 — Bag handle concept, Hudson Pulp & Paper Co.

No. 7237 — Cyclonic feed mixer, Barnard & Leas Manufacturing Co.

No. 7238—Hog health handbook, Dr. Salsbury's Laboratories.

No. 7239—High-speed sewing head, Union Special Machine Co.

No. 7240—Feed supplement, Peter Hand Foundation.

No. 7241—High-capacity grain dryer, Behlen Manufacturing Co.

No. 7242—Scale data sheet, Richardson Scale Co.

No. 7243—Steel building literature, Butler Manufacturing Co.

No. 7244 — Formula feed folder, Sohio Chemical Co.

No. 7245 — Materials handling units, Daffin Manufacturing Co.

No. 7246—Poultry disease booklet, Sterwin Chemicals, Inc.

No. 7247—Chemical company brochure, U.S. Industrial Division, National Distillers and Chemical Corp.

No. 7248 — Animal health folder, Merck & Co., Inc.

No. 7249 — Poultry health folder, Merck & Co., Inc.

No. 7250—Automatic egg counter, Hawkes Cage System.

No. 7251—Poultry de-winger, Dakota Ranches.

No. 7252—Hammermill literature, Prater Pulverizer Co.

No. 7253—Folder on "Penstrep" line, Merck & Co.

No. 7254—Texturing material, Philip R. Park, Inc.

No. 7255—Ventilation system, Rolfes Grain Aeration Companies.

No. 7256—Story on feed mills, Sprout, Waldron & Co., Inc.

No. 7257—Mailing piece on pulverizers, Prater Pulverizer Co.

No. 7258—Weigher, filler bulletin, Richardson Scale Co.

No. 7259—Stone detector, Seedburo Equipment Co.

No. 7260—Cattle health product, Merck & Co., Inc.

No. 7261—Equipment brochure, FM Engineering Co., Inc.

No. 7262—Custom feed milling booklet, Prater Pulverizer Co.

No. 7263—Hammer mill, Sprout, Waldron & Co.

No. 7264—Poultry feeder, Oakes Manufacturing Co.

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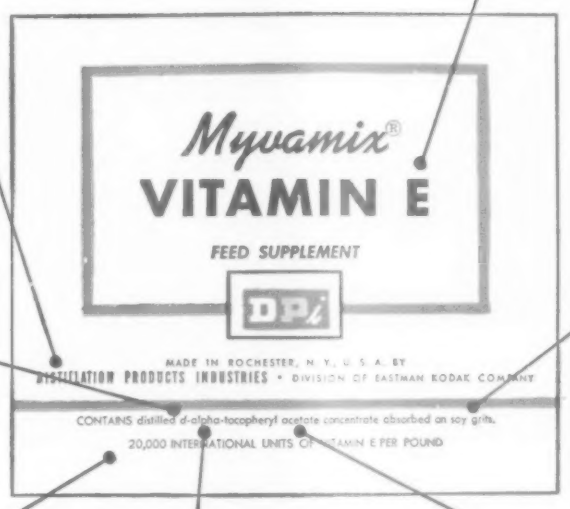
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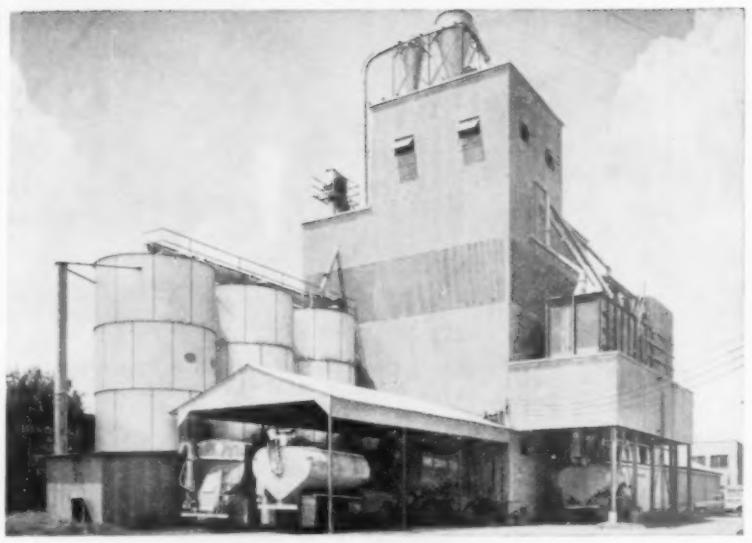

NEW CAMERON BULK MILL—This is Nashville (Ark.) Feed Mills, Inc., a bulk mill constructed by Cameron Feed Mills to meet the demands of the poultry industry in the area. The all-bulk plant has a capacity of 24,000 tons annually and it serves the industry in the southern part of the state. The firm has another plant at Russellville, Ark., along with the main plant at North Little Rock, and it plans two more bulk mills, at Hope, Ark., and El Dorado, Ark., both in the southern part of the state.

Contract Growing, Bulk Feeding Boom Arkansas Poultry Industry, Feed Manufacturer Points Out

How bulk feeding and contract growing are working hand in hand to develop a spectacular boom in the Arkansas poultry industry has been described by an Arkansas feed manufacturing official.

J. E. Scott, vice president, Cameron Feed Mills, North Little Rock, said the two trends have made the poultry business a major industry in Arkansas with the end "nowhere in sight."

"The phenomenal growth of the industry has changed Arkansas from an egg deficit area to a land of surplus, and has boosted the state to a position of second in the nation in broiler production."

Contract farming and bulk feeds have been hand in hand in the development, "as closely tied to one another as the chicken and the egg."

Contract farming has resulted in all sorts of agreements between hatcheries or feed mills and landowners, he said. One doesn't have to be a farmer to get into the business. The Corn Belt Hatchery, Hope, Ark., will "set you up if you own a big enough piece of land with a house in that area."

The hatchery will find a bank to get a loan for the producer, will furnish specifications and builder for poultry houses, will supply the birds and feed, get a family to raise the broilers or layers and market the meat and eggs.

14% Profit

"You don't have to go near the place yourself," he said. "The bank loan will cost you 6% interest, but you'll get a return on your investment of about 20%. That figures 14% profit on the amount you borrow."

The poultry business in the state is flourishing because of large-scale operation, better breeding, better nutrition and better management, the feed official said.

Large scale operations are possible because of bulk feeding, he declared, and the developments within his own firm give an indication of the rapid trend toward bulk. Cameron Feed Mills, Inc., sold mostly sacked feed until seven or eight years ago.

Bulk handling began in the early 1950's, and in 1954 Cameron built a bulk mill at Russellville where fruit crops had failed and poultry farms were springing up. The mill assured prompt deliveries and cut costs for the firm. It is now producing about 24,000 tons of feed a year, primarily broiler feeds.

Then southern Arkansas began to develop as a poultry center. To develop with this area, Mr. Scott said, it was necessary to deliver bulk feeds at attractive prices. Because this couldn't be done from the mill at North Little Rock, Cameron built a $200,000 mill at Nashville, Ark. Known as Nashville Feed Mills, Inc., it is primarily for the broiler growing and turkey industry. It has a yearly capacity similar to the Russellville mill.

The Nashville area provides a good example of how the poultry industry has expanded in Arkansas, Mr. Scott pointed out. Seven years ago there were 50,000 broilers in the area; today there are nearly one million. There were no commercial layers; today there are 140,000. Turkey population during the period has grown from 500 to 60,000.

More Mills Planned

Cameron is now planning two more mills in the southern part of the state, one at Hope and the other at El Dorado. The one at Hope will be only 30 miles from the Nashville location. It will also have annual production of 24,000 tons and will primarily serve the Corn Belt Hatchery

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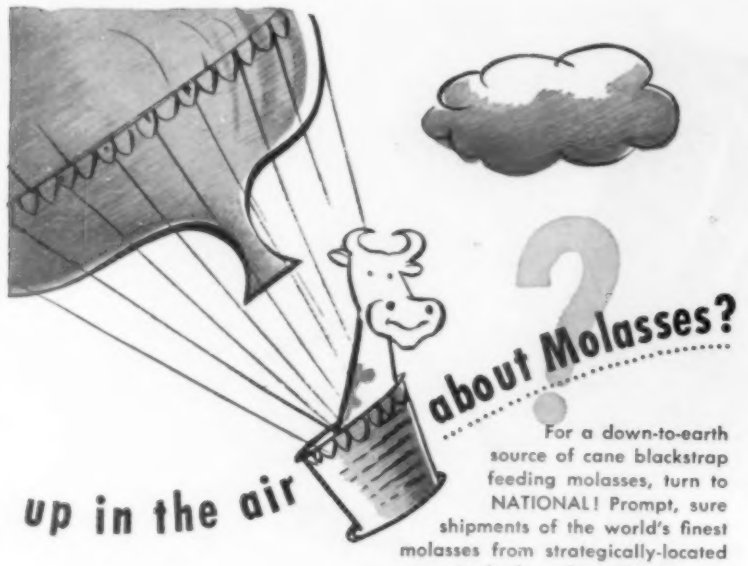

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ARKANSAS BROILER HOUSE—Two-week-old chicks are shown in this 10,000-bird capacity broiler house on the farm of Cassady Hatchery near Nashville, Ark., one of Cameron's big feed customers. The pole type house is 240 by 40 ft., and it is standard in southern Arkansas. Equipment includes automatic feeders and waterers inside and a 5½-ton storage bin outside for bulk feed. The house and equipment cost $7,500.

at Hope and the contract farms in that area.

Construction at El Dorado was decided because Corn Belt Hatchery and others are opening that area, and Cameron "will have to be on the spot to meet demand," Mr. Scott said. This mill will also have a capacity of 24,000 tons.

"If I sound as though all you need to sell feed to the poultry industry is a mill in a strategic location," Mr. Scott said, "I'd better make an important point right here. Selling feed is like selling any other merchandise. You first must have a good product. If you don't, you might as well forget about mills, locations, distribution and everything else." He said Cameron strives constantly to improve formulas.

Mr. Scott said that when the company's nutritionist prepares a feed formula, he submits it for analysis and comment to the technical service department of Nopco Chemical Co., Harrison, N.J., and to other consulting nutrition experts.

"By the time our formulas are returned with analyses from these authorities," he said, "we're sure we have what we need."

For the past two years, Mr. Scott noted, the Cameron firm has been using fortification products manufactured by Nopco.

Hatchery Expansion

The firm's biggest poultry customers are the Cassady Hatchery, which has its headquarters in Nashville, and the Corn Belt Hatchery and its subsidiary, Southland Farms, at Hope.

The Corn Belt laying flocks are hatched at Hope, then placed in houses of about 50 contract producers. The chicks are held in the houses seven to 10 weeks, put on the range for 10 to 16 weeks under limited feeding with pellets on the ground, and then returned to the houses.

Southland Farms at present has

OFFICE CONFERENCE — Talking things over are Guy Ted Cameron, left, president of Cameron Feed Mills, Inc., North Little Rock, Ark., and Joe E. Scott, vice president. Mr. Cameron is the son of the founder of the firm. Mr. Scott is a 41-year veteran with the company.

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Thanks to a recent Morton Salt research discovery, you now get this kind of free-flowing salt when you use Morton Special Mixing Salt. Both Morton Special Mixing Salt and Iodized Mixing Salt may be safely stored in bags or bulk for any reasonable length of time. They won't cake or lump—even when humidity is high. And you'll find that they flow more freely, after storage, than any salt you have ever used. Morton's nation-wide distribution enables you to get Morton Special Mixing Salt and Iodized Mixing Salt anywhere in the United States.

Morton also makes available Trace-Mineralized Mixing Salt containing: **Salt, Manganoferro Phosphate, Ferrous Carbonate, Copper Oxide, Cobalt Oxide, Cuprous Iodide and Zinc Oxide.**

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CAMERON MAIN PLANT—This is the main Cameron Feed Mills, Inc., plant at North Little Rock, Ark. The roofed over platform is a recent addition to the concrete and steel building. This is one of three mills operated by the firm in Arkansas. It has built two bulk mills since 1954 and plans to add two more to meet growing demand resulting from the booming poultry industry in the state.

114,000 laying hens on contract farms. The plant at Hope is processing 48,000 doz. eggs weekly. Three servicemen, with two-way radio cars, work with the producers.

Cassady Hatchery has weekly production of 44,000 broilers and this will be up to 70,000 weekly in the near future, Mr. Scott said. Cassady has a broiler operation of 750,000 birds and a breeder operation of 15,000 hens.

Broilers grown by both Corn Belt and Cassady are sold between eight and nine weeks at a weight of 3 to 3½ lb. Mr. Scott said 7 lb. of feed are used to produce the bird.

"This ratio of feed to meat is about the same throughout this growing area. It has been reached through scientific feeding and growing, through the keeping of accurate records of growing and breeding, and through formulation of quality feeds."

Cameron Feed Mills, Inc., was founded in 1914. The firm made dry feeds, and early volume was mostly for horses and mules. Molasses feeds were added in 1919. The firm added poultry feeds in mashes and scratches in 1924 and started pelleting in 1944.

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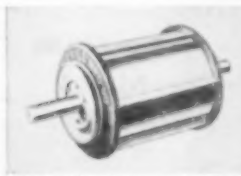
Stray metal in your product can damage machinery, cause fires, kill cattle and poultry and ruin your company's reputation. To protect your investment install an Eriez Magnetic Pulley, ideal for automatic tramp iron removal in many milling processing lines. The Eriez Pulley shown is removing over 500 lbs. of dangerous iron weekly from a processing line to assure a safe, metal-free product.

Designed to pull dangerous tramp iron from grains and processing lines of all types, an Eriez permanent-powered magnetic separator will protect your equipment, your product purity and your reputation.

ERIEZ HI-POWR MAGNETIC SEPARATORS — ERIEZ HI-VI VIBRATORY EQUIPMENT



Magnetic Drum—used for spouts, chutes, spiral conveyors, etc. . . . whenever the materials are not conveyed on belts. Works equally well with hot or cold, wet or dry products. Self-cleaning . . . automatically drops tramp iron away from product.

Grate Magnet—ideal for surge- or choke-fed lines. Material is directed by iron grill onto powerful magnetic tubes. For floor openings, hoppers, chutes and ducts. Drawer-type models are also available for enclosed passages.

Plate Magnet—powerful, fully enclosed magnetic units, for stationary or hinged installation. Four magnetic strengths, depending on depth of flow of line. Standard sizes from 4" to 72" width, in 2" increments. Special sizes made.

All Eriez Magnets are non-electric, self-contained, easily installed. They operate without any wires or attachments. Magnetic power is guaranteed indefinitely . . . first cost is the last.

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Newest, most efficient way to keep hard-to-move materials flowing through bins, hoppers, chutes, etc. Exclusive pinpointed vibration impact gets right to trouble spot—starts *and keeps* stubborn materials moving. No rectifier needed; just plug or wire in. Completely enclosed housing. Greater vibration impact than comparable size units. Low initial cost; low operating and maintenance costs. Special Mill Mutual Accepted units for hazardous, dusty locations. Write today for big Vibratory Fact File.

*Pat. Pending

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Write to: Eriez Mfg. Co., 118-LB Magnet Dr., Erie, Pa.

Feed Firm Executive Compares European, U.S. Agriculture

FAIRBURY, ILL.—A recent tour of Europe and his ancestral home in Switzerland gave Frank E. Honegger, vice president of Honeggers' & Co., Inc., Fairbury and Forrest, Ill., an opportunity to compare the agricultural industry of the U.S. and central Europe.

The 41-day trip took Mr. Honegger through nine countries and gave him a look at what the average European farmer considers a successful farming operation.

Smaller poultry flocks than are commonly known in the U.S. predominate on European farms. The average-size flock is approximately 12 to 15 birds, and the birds are considerably less productive than in the U.S. Grain farms range in size from 3 to 20 acres, and each inch of land is utilized to the fullest from the standpoint of production, Mr. Honegger said.

"Trees, even along the highways, serve a three-fold purpose—to bear fruit, provide shade and, when they die, to be used as fuel. The main meats are chicken, fish and veal," the feed company executive commented.

While in Belgium, Mr. Honegger visited the De Rycke Hatchery at Gavere, Belgium, near Brussels. It is the second largest of the 150 Honegger associate hatcheries. He also toured the World Industrial Fair at Brussels.

Mr. Honegger's grandfather, Jacob Honegger, came to central Illinois from Bern, Switzerland, almost a century ago.

Animals Eat More Of Pelleted Rations

DAVIS, CAL.—Animals gain more on alfalfa pellets than on chopped alfalfa because they eat more, according to Dr. James H. Meyer, animal husbandry staff member at the University of California, Davis campus.

According to Dr. Meyer's investigation, which involved feeding lambs alfalfa in both forms, there was very little nutritional difference between the two feeds. But since the finely-ground, pelleted feed went through the digestive process more rapidly than the hay, the lambs were able to eat more pellets and therefore gained faster.

During the 56 days of the experiment the lambs fed pellets made an average daily gain of .4 lb. while eating 3.25 lb. of feed per day. Lambs fed all the chopped hay they could eat gained only .27 lb. a day while consuming 2.48 lb. of hay.

Cooperating with Dr. Meyer in the experiment were Dr. William C. Weir, also of the animal husbandry department, and two animal husbandry graduate students, R. L. Gaskill and G. S. Stoews.

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NICE DESIGN — William Schafenacker and Otis Joiner, officials of Kent Feeds, Inc., Muscatine, Iowa, like the looks of the new Kent feed bag design (and possibly its contents) that was presented (that is, the new bag design) to Kent dealers as part of recent company dealer sales clinics at Davenport and Sioux City, Iowa. Other features of the two-day meetings, attended by more than 300 Kent dealers, included fundamental nutrition and sales information. Among the speakers at the meetings were: Tom Lawrence, management consultant, Kansas City; Dr. A. L. Neuman, University of Illinois, and Dr. L. E. Hanson, University of Minnesota.

Southern States Co-op Opens Bulk Station

RICHMOND, VA.—A modern bulk station has been opened at Harrisonburg, Va., by the Southern States Cooperative to service patrons in the Shenandoah Valley area. The station is composed of 22 feed bins with a capacity of 320 tons.

According to Service Guide, a Southern States publication, patrons can receive poultry and turkey feeds in bulk form at the present time. Although all Southern States feeds in all forms cannot be handled by the station because of a limited number of bins, it is possible for patrons to use the bulk feed and follow the recommended Southern States feeding programs for all poultry and turkey flocks.

The bulk delivery truck has four compartments, each of which holds three tons.

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Livestock "Lease" Contracts Prove Popular in Virginia

RICHMOND, VA.—The increase in share-lease contracts for the production of livestock in Virginia is likely to continue for several years, according to Dr. W. L. Gibson, agricultural economist at Virginia Polytechnic Institute.

"Apparently, the intent of most of the agreements between Virginia farm owners and operators," Dr. Gibson said, "is to prepare a livestock share-lease, even though some of the provisions agreed upon often closely resemble a partnership."

The legal status of the parties to the agreement depends upon whether a share-lease contract or partnership is created, he explained. This distinction is especially important in determining liability for debts, losses, injuries to farm employees and damages to property.

"It is difficult to state precisely what type provisions will be construed as creating a partnership rather than a share-lease," he continued, "and livestock producers should prepare a written agreement which adequately spells out all necessary provisions for proper operation of the farm as a landlord-tenant arrangement."

Provisions for sharing net profits, joint ownership of business assets, equal managerial responsibilities and power to act alone in creating a business debt are usually considered as important criteria in establishing a partnership.

The trend toward this type of "contract farming" is being established, it was pointed out, in view of the increasing number of plans involving the feeding out of hogs similar to arrangements common to the broiler industry.

Iowa Reports Poultry Flavor Test Results

AMES, IOWA — Investigations by Iowa State College food researchers indicate that antibiotic treatment of broilers in refrigerated display cases does not affect flavor of the birds.

Previous investigators had found that treatment with antibiotics checked the number of bacteria. The research team set out to determine if this affected flavor.

Taste panels noted no flavor difference between the treated and untreated birds. Both tasted fresh up to 11 days of storage. The team said factors other than bacteria count determine freshness.

The team also tested packing materials, and found that a Cryovac (plastic type) wrapping material kept flavor fresher than a cellophane material.

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Tranquilizers Tested on White Leghorns Fail To Reduce Tension

RALEIGH, N.C. — Two tranquilizers were tested on White Leghorns at the North Carolina Agricultural Experiment Station, but failed to lessen noticeably the nervous, flighty characteristics of the birds at the levels the drugs were fed in the rations.

Five groups of 20 male birds each were used. One group served as a control, two groups received Miltown in the feed at levels of 125 and 250 mg. per pound of ration and two other groups were fed Sparine at similar levels.

The drugs were present in the feed from the day the chicks were hatched until they were killed at the end of the fourth week. The chicks were kept in heated, wire batteries and had commercial feed and water before them at all times.

At the levels administered, the tranquilizers not only failed to reduce tension in the birds, but appeared to be slightly toxic, the researchers said. Birds receiving the drugs failed to gain as fast as the control group. This difference was slight for those receiving Miltown, but those given Sparine weighed significantly less at the end of four weeks.

The experiment was reported by Dr. Henry W. Garren and Dr. Charles H. Hill, both of the poultry science department.

The researchers mentioned in the report that an effective tranquilizer for poultry could have practical and experimental value in making the birds easier to handle, thereby reducing injuries caused by excitement when birds are being weighed, marketed or blood-tested.

They pointed out that the calming effects of Miltown have been reported for humans and experimental animals, and that Sparine has been reported to be an effective tranquilizer for certain human patients.

DDT May Make Apple Pomace Unsuitable

BLACKSBURG, VA. — Virginia Polytechnic Institute specialists passed along to farmers recently a warning from the Food & Drug Administration that apple pomace containing more than seven parts per million of DDT is not suitable for use in animal feeding.

Under a recent amendment of the Federal Food, Drug and Cosmetic Act, it will be illegal for a processed food or feed to contain more residue of a pesticide than is allowed on the raw product from which it is made, unless a higher tolerance has been granted for the final product. The tolerance for DDT on apples is seven p.p.m.

At the same time, FDA warned that apple pomace containing any DDT is not suitable for dairy feeding, and that it involves the risk of producing illegal meat if fed to meat animals, even though the pomace contains less DDT than seven p.p.m.

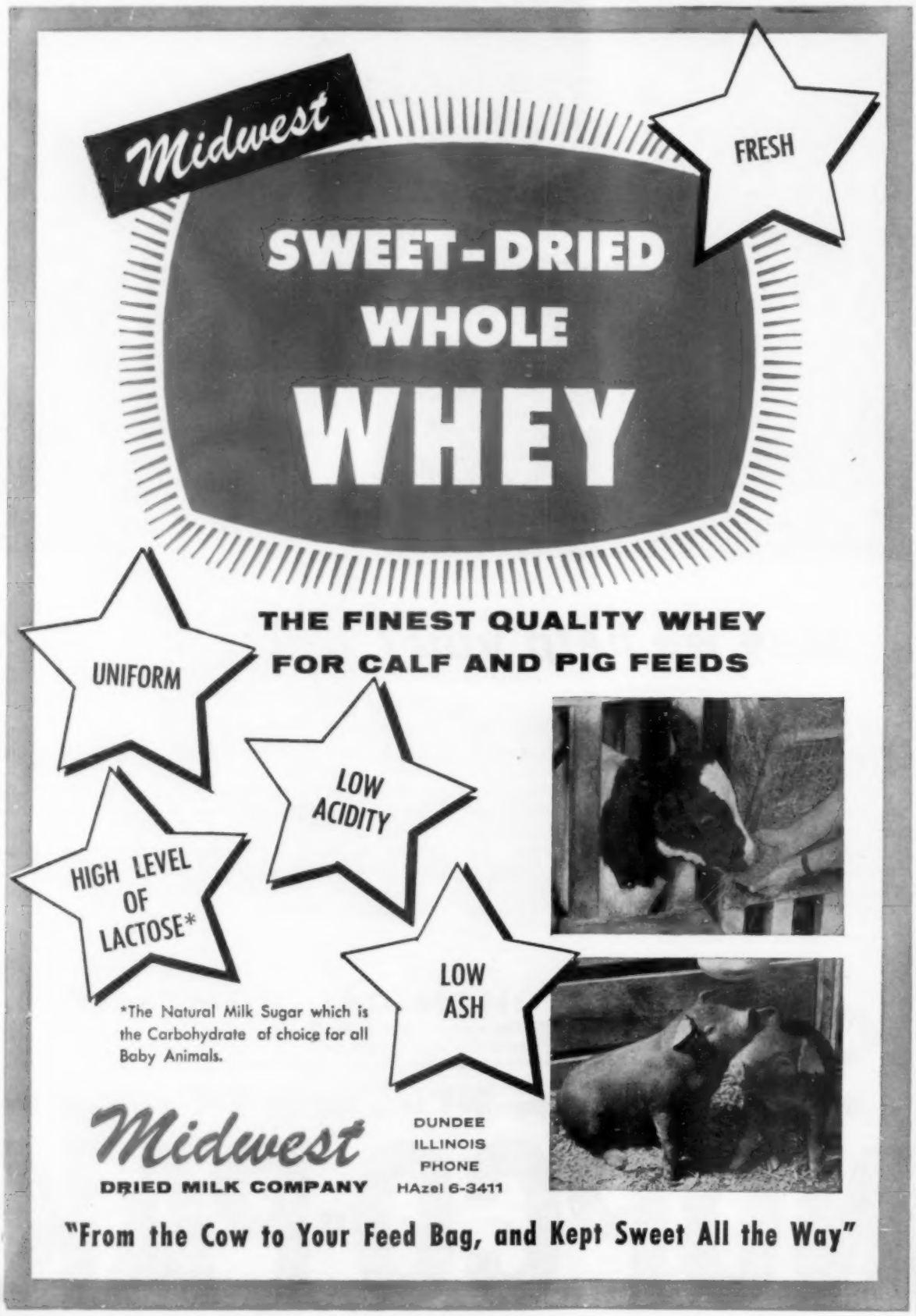
No DDT is allowed in milk. Studies show that even minute amounts of DDT in feed will result in contaminated milk.

A tolerance under the law permits 7 p.p.m. of DDT to remain in or on the fat of meat from cattle, sheep and hogs. However, animals eating DDT may accumulate considerably more of it in their fat than was present in the feed, because DDT is stored and accumulated in fat tissue, the report said. Once the DDT content of animal fat exceeds the tolerance, a long period on DDT-free feeding may be needed to reduce the residue to the permissible level.

It has not been established under what conditions of feeding, if any, apple pomace containing less than 7 p.p.m. of DDT can be fed to animals without causing the meat from them to contain excessive DDT residues. Unless a producer can establish this, he should not use apple pomace in feeding meat animals, the FDA advised.

William A. Mitchell

NEW POSITION—William A. Mitchell has been appointed assistant director of the animal nutrition and feed control laboratories of the Early & Daniel Co., Cincinnati, manufacturer of Tuxedo Feeds. Robert L. Early, president of the company, said Mr. Mitchell will be filling a new position created to increase the flexibility of the operations of the laboratories. A graduate of Ohio State University, Mr. Mitchell joined Early & Daniel in 1949 at Harrisonburg, Va., where he was responsible for feed distribution and service to large broiler and turkey feeding operations. Subsequent positions included that of retail feed store manager at Sugar Creek, Ohio, and field sales representative in central Ohio.



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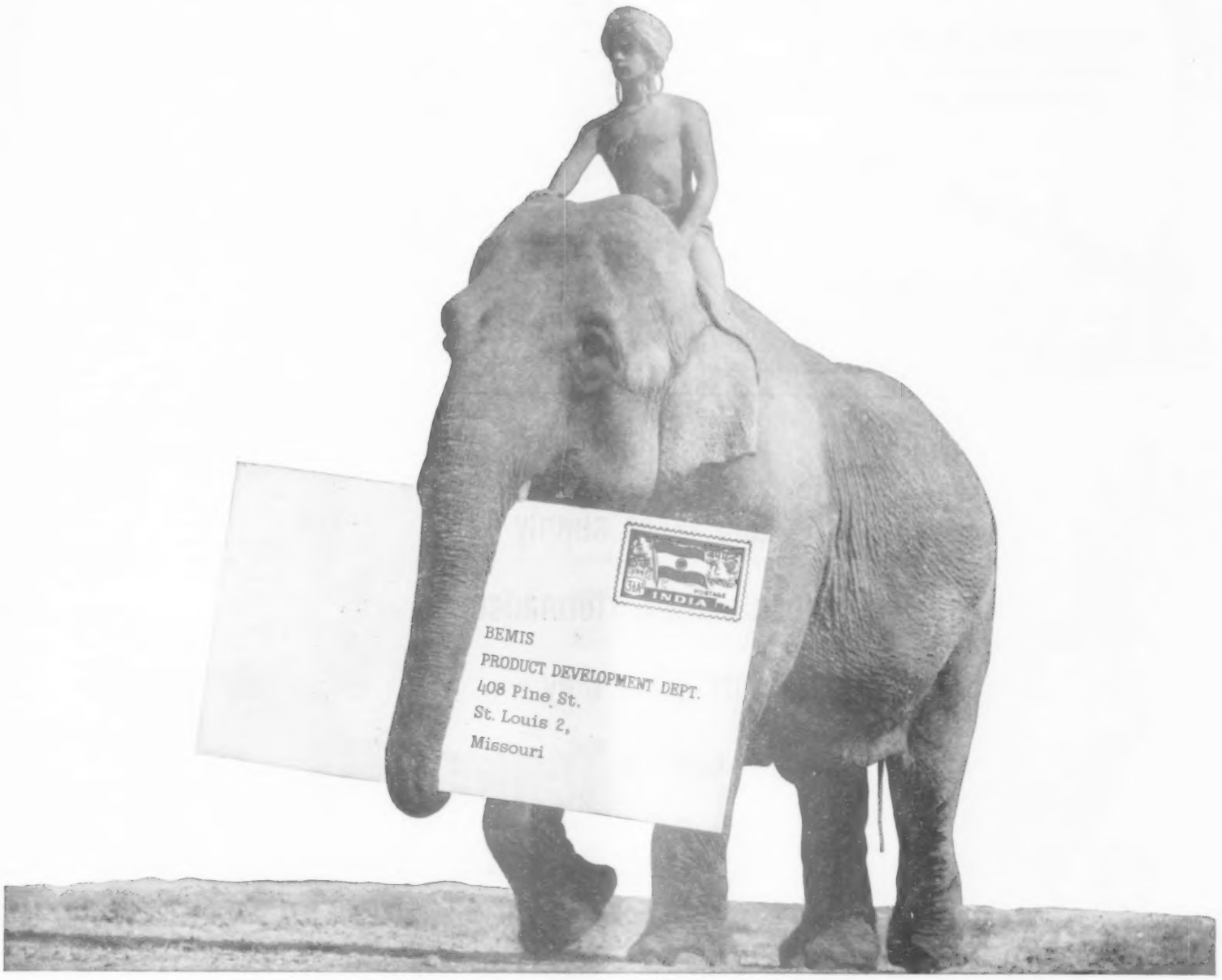

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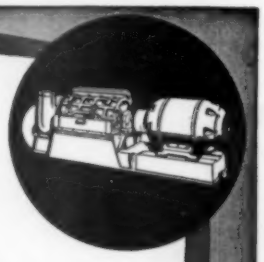

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FEED GRAINS

(Continued from page 24)

sion in the broiler field for the next decade will be phenomenal.

Poultry in most of the countries visited is considerably higher priced than red meat. In fact, it is classified as a luxury and is taxed accordingly. The efficiency of production varies with the country, size of flock, and intelligence of the producers. Acceptance of the latest methods of broiler production can increase the consumption of chicken meat in many of these countries enormously, with only slight or no adverse effect on hog and beef production. To accomplish this, the local population must be educated to: (1) realize the beneficial nutritional value of chicken meat, and (2) allow the price of poultry to seek the natural supply and demand level, thus becoming an every-day item instead of a holiday or doctor's prescription item.

Poultry Consumption

The trend of poultry consumption is upward, and with the right educational and merchandising promotion it will increase as fast as it did in the U.S. The increase will vary in proportion to the development of the country. The U.K. expects to triple its consumption by 1960. This figure is considered quite conservative by experienced British food merchants.

West Germany is next in line. Italy and Greece have a very large potential if the people are made aware of the benefits of a better diet.

The exchange reserve in most countries is the No. 1 problem. Even though some of the countries, like West Germany and Britain, have improved their hard currency position, they fear reduction in the reserves. Trade in those countries is tied closely with import license and governmental regulations on the use of hard currencies. Bilateral agreements often channel trade, not to the country which offers the lowest price, but to that country that is willing to accept goods in exchange.

West Germany's buying feed wheat from France at prices considerably higher than competition is a case in point. Raising the price of imported feedstuffs to the German farmers and the permission for importation of eggs and broilers from Denmark and the Netherlands freely is another illustration.

Trade is of chief importance to the developed countries. The discussion of the Reciprocal Trade Agreement in the U.S. was attracting much attention in Western Europe. Any move which assists trade between the U.S. and the other countries and increases their reserve of hard currencies will ultimately increase the quantity of feedstuffs taken by these countries.

The U.S. system of price support for grains is being copied by all the countries and is a real obstacle in selling U.S. feed grains. Thus, a reduction in price will not increase the quantity taken. The desire to become self-sufficient as protection in time of emergency is less important than the fact that a satisfied agricultural population is more stable and conservative. Large sums are expended to keep the agricultural population contented, even though sometimes it works at cross-currents.

U.S. Approach

The U.S. approach should be changed from "surplus disposal" to "assisting the world and local economies."

Some countries are unwilling even to accept donations. The approach should be assistance in improving the economic conditions of the coun-

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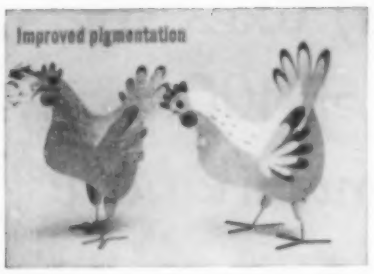

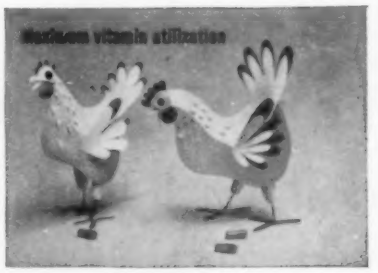

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Tenox BHT improves pigmentation in poultry by increasing the utilization of Vitamin A.

Tenox BHT increases weight gain by maintaining maximum nutritional content right up to the time the feed is used.

Tenox BHT protects poultry against certain deficiency diseases.

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Tenox BHT-Agricultural Grade was developed to meet the specific needs of poultry feed manufacturers. It is the result of information provided by feed manufacturers combined with our own extensive knowledge of antioxidant performance.

Build extra performance into your feeds by specifying the antioxidant specially made by Eastman for feed use...Tenox BHT-Agricultural Grade. Tenox BHT-Agricultural Grade is available from leading distributors throughout the country. To find out how you can use this antioxidant in your feed formulations, write today to EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of the Eastman Kodak Company, KINGSPORT, TENNESSEE.

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DaweNzyme extensively tested by state experiment stations and proved commercially, is an economic boon to those where barley is available for less than corn. With DaweNzyme, barley can be the principal grain without the former penalties of lowered growth and feed efficiency, compared to corn.

DaweNzyme is easily incorporated in the feed formula. It is a dry, free-flowing, stable material. No special handling is involved and ordinary mixing procedures are followed.

While attention has been focused on barley, tests show small, but consistent, improvements in the utilization of corn itself, when supplemented with DaweNzyme.

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ADVANCED FARM SERVICE SCHOOL—The first of a series of advanced courses for feed representatives in Upper Midwest states was held recently by Peavey Feed Mills, Minneapolis, manufacturer of Tone Feeds. Eleven men completed the course. It was attended by those who had previously completed the basic course on service training held by Peavey Feed Mills. Pictured (left to right) are: Front row—Glenn Abrahamson, Willmar, Minn.; Gerald Spindler, Stratford, Wis.; Norman Dehmer, Hanover, Minn.; Lawrence Glover, Utica, Minn.; Roy Osen, DePere, Wis. Second row—Robert Osen, DePere, Wis.; Joseph Sawrey, Paynesville, Minn.; Robert Davies, Chaska, Minn.; Orlin Olson, Roseland, Minn.; Gerald Huntting, Farmington, Minn.; Normal Nelson, Ruthton, Minn. The school included advanced work in livestock management and disease and modern feeds and feeding practices.

try by offering: (1) technical know-how and information; (2) long-term loans, but not giveaways; (3) improving the climate for foreign investors.

The less developed the country, the more caution is necessary in offering assistance. Giving puts the recipient at a disadvantage. Understanding of the receiver's point of view is paramount.

The short-term approach to the potential utilization of U.S. feed grains is based on present carryover, plus the growing crop which depends on weather, and the use of recent technological developments. The quantities taken from the U.S. will vary with the size of the surpluses available in the other export countries and the demand and trade agreements in the deficit countries.

Any sound market promotion and development of feed grains must have a long, rather than a short-term objective. There has been some criticism that, if the U.S. is seriously interested in exporting feedstuffs, it should be a good merchant. It must have goods of the same quality available at competitive prices. It cannot be an "in and outer." An organized method of market promotion will hasten the expansion of poultry production in all countries. The approach must be indirect.

An organization of groups interested in all phases of the local economy, production, processing, distribution and other allied industries, starting with the producers and following through to the dining room table could best carry out this market promotion. A cooperative effort on the part of those interested from a profit point of view, and the nationals interested in the welfare of their people would shorten the development period.

The development of self-service chain food distributing outlets and super markets indicates that the trend is in the right direction.

Foreign Surpluses

The surplus producing countries, such as Argentina, parts of Africa, the Middle East and occasionally the Danubian countries are in the export market when they are blessed with an abundance. They are going to sell their surplus of grain irrespective of price because they need the foreign exchange. It would be poor business, as well as bad international relations, to try to sell more than our share. During their peak movements, the U.S. should let other countries participate a little heavier in the world export of feed products. However, intelligent interpretation of quotations and intentions of the competitive countries is essential.

The large number of official visitors from the U.S. either as teams, as study projects, or as governmental observers create a problem. The local officials are confused as to the purpose and effectiveness of these visitors. More scrutiny and coordination are advisable before beginning a new project.

The American Soybean Council, with offices in Madrid and Rome, has done a good job in promoting the use of soybean meal and the sales of soybean oil in Spain and Italy.

Foreign Attitudes

The importers in all countries had little criticism of the quality of grain they are receiving. With the exception of foreign material in soybeans and corn, they seem satisfied with shipments from the U.S. There were occasional observations that buyers couldn't get the higher grades of corn and that offers of U.S. grains, especially barley, oats and rye, are spasmodic. In the final analysis, it is the price and local governmental restrictions of either exchange or import licenses that determine where the importers buy.

It was also observed that when wheat is sold with a protein guaranty there are discrepancies between the analysis and samples, time of shipment, and the findings by the millers on arrival. Protein is becoming an important factor in U.S. wheat ex-

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PALATE DELIGHT—Lorne F. Van Stone, president of Uncle Johnny Mills, Houston, is presented an ultra-special dish by the chef of Ye Olde College Inn at Houston. The occasion was a dinner for Uncle Johnny Mills employees and their families as a part of the company's 60th anniversary observance. The special dish consisted of a stuffed Rock Cornish Game Hen placed in a bed of wild rice and chestnut sauce, and garnished with glazed sweet potato. All of this was then folded in gold foil to resemble a bird. A grilled pineapple ring was placed around the neck of the "bird" and red angel feathers were used as wings. Two headed wheat stalks were used to form the tail.

ports, especially to Britain. Acquisition of bakeries by the large British millers is forcing production of a stronger uniform flour. Though price will still be a factor, the British will be buying quality.

Handling Facilities

The local handling facilities are very satisfactory in the developed countries but could be improved in Greece, Turkey and Israel. The demand for feedstuffs in Greece depends greatly on the severity of the winter. With facilities only at the ports and one in the interior where feeds are needed, the consumption of feed grains is reduced, because by the time the feed arrives at points of need the weather has changed for the better.

Storage facilities in the interior would be helpful to livestock producers in Greece and would increase total use of feed grains. The animals' stomachs are relatively inelastic. They cannot absorb the feed at some future date after going hungry for a week or fortnight. Port facilities in Israel are also insufficient to carry a reserve stock of feed grains for emergency.

Buying practices of each country are based on its experience. With the exception of Italy and Greece, the buyers are well aware of the nutritional value of each grain. Price and government regulations are governing factors as to where they purchase. Though there is considerable prejudice in Italy against U.S. corn in favor of Argentina, price will be the governing factor if exchange is provided.

Buying practices depend entirely on the evolution of the grain and feed industry in each country. Where there are no merchants, the feed manufacturers accumulate their own inventory when warehouse space is available. In countries where there are importer-merchants, quite often the latter assume the risk of carrying inventories, depending on their judgment as to the trend of future prices. One can hear observations that it takes too long to receive the grains from the time of purchase. These observations are not always justifiable. The anticipated lower trend of the market is often the deterrent.

It is true in instances where negotiations are between government and government that there is a lot of red tape on the part of both governments. It is natural that government officials are likely not to be quite as fast in their decisions as private merchants where the profit motive is the determining factor. Quicker consideration by the U.S. government under PL 480, and a more realistic and commercial approach on the part of the buying country would shorten the negotiation period and result in greater feeds use.

Objectives

Over the long term, the attitude must be indirect and general in nature, yet objective and well-defined and planned. Objectives to strive for are:

(1) Increase and improve the purchasing power of the countries; if we succeed in the above objective the increase in use of U.S. feed grains and concentrates will come naturally.

(2) Educate the people to understand that better diet will help them improve production.

(3) Improve efficiency of production and distribution.

(4) Gradual acceptance by the U.S. that the principle of competitive advantage in agricultural production instead of unrealistic supports should guide production.

The staff conducting the market development program should be headed by a comparatively young, energetic administrator. He should be able to call on experienced, practical technicians. They can be recruited from retired educators and executives from private industry on leave of absence.

Direction and top policy should be handled by the U.S. representatives; actual operations, communications, and contacts should be performed by nationals. Nationals trained in the U.S. make better disciples for introducing U.S. methods, both in technology and consumer acceptance. Whenever possible the front man should be a national. Headquarters of the program should be in the cen-

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ter of the scene of operations—perhaps in Rome.

Ideal Program

Although it might take longer to get it under way, the ideal program would be an international one in which all nations could take part with the U.S. providing the bulk of the funds and personnel.

After a decision is made to launch a market development program, all possible steps should be taken to coordinate activities with the Foreign Agricultural Service, ICA, and Food and Agriculture Organization. Assistants from each country should also be recruited to visit the U.S. and gain experience. Great stress must be put on: (1) not giving any advice or criticism unless it is sought; (2) respecting the feelings and wishes of the locals; and (3) creating a humble attitude among personnel because it is human nature to resent superiority.

We must recognize that the other countries are old, mature, and have established traditions which cannot be changed in a hurry, and what is good for us may not appeal to them at all. If we can learn to approach the problem from the other fellow's point of view rather than ours, we will be further ahead.

The policy of the marketing organization should be based on the fact that in the long run the better each country is fed and the more it produces and the freer the trade, the more it will demand from the surplus producing countries.

The objective should be the improvement of the standard of living and purchasing power of the country in question. This will, in the long run, result in a bigger share of exports from the U.S.

Method of Approach

The method of approach should be more indirect than direct; it should be in the field of education and market development of foods and feed balances. The more advanced the countries, the more receptive they are.

Britain, through its organization of poultry producers (broilers and turkeys) is very anxious to cooperate. Italy is anxious to receive help in the field of nutrition, both for animals and humans. Greece is still in the early stages of development and is ready to have help to (1) improve its methods of feed manufacture; (2) produce eggs and broilers; and (3) give instructions as to better human nutrition. In Israel, although the general standard of living is relatively high, a big percentage of the population, especially those coming from North Africa and from Arabian countries, need help in nutritional education.

Any action in introducing these foods must be geared to a long-term objective. Intermittent deliveries and presentation in the form of fairs, without any follow-up, lose their effectiveness. In all discussions the question of continuity was stressed. The objections, which are valid, are "unless we are assured that we are able to produce and offer the better nutritional foods continuously, we are better off keeping them scarce." The countries cannot afford to provide better foods for a short time and then be obliged to withhold them from the people. In semi-developed countries where the outlay for food is the biggest share of each person's income, political repercussions of such withholding would be inevitable.

DEDICATION—These officials were among participants in the recent dedication of the new eastern distribution center of Chas. Pfizer & Co., Inc., New York. The center, located at Clifton, N.J., is regional headquarters of agricultural sales and three other marketing divisions. The modern, single-story building also houses offices for Pfizer and J. B. Roerig Co. chemical sales. Shown are (left to right): Paul Purington, regional manager, animal health products; Frank Tuppeny, regional feed supplements salesman; Joe Ashey, regional office manager, agricultural division; Marty Fredericks, regional supervisor, feed supplements; John E. McKeen, Pfizer president; Allen Calkins, regional manager, agricultural division; E. H. Smith, Pfizer controller, and A. J. Greene, administrative vice president of Pfizer. The young lady on the poster in the background is Susan Treat, who as "Miss EGGtober" spearheaded the recent Pfizer campaign to promote production and consumption of eggs.

Scholarship Renewed

MANHATTAN, KANSAS — Jerry Lynn Kintigh, Norton, Kansas, junior in feed technology and holder of the Industrial Research Foundation scholarship in the department of flour and feed milling technology at Kansas State College, Manhattan, has had the scholarship renewed for the current school year. Announcement of renewal of the $300 scholarship was made by the college.

Wirthmore to Sponsor College Scholarships

WALTHAM, MASS. — Wirthmore Feeds, Inc., Waltham, has announced that it will sponsor several four-year college scholarships for high school students. To be administered through the National Merit Scholarship Program, the plan is designed to encourage outstanding young minds to seek college training in preparation for a future in agriculture.

Any high school senior in the 17 states served by Wirthmore is eligible if the student is to pursue a course of study with the school of agriculture leading to a B.S. degree at a land grant college in one of those states.

Candidates for the scholarships will qualify by taking the examinations offered annually by the National Merit Scholarship Corp.

The amount of each scholarship to be awarded for each of the four years will be based upon actual need, the amount being determined by the formula used by the National Merit Scholarship Corp.

States served by Wirthmore include: Connecticut, Delaware, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, North Carolina, South Carolina, Vermont, Virginia, West Virginia and the District of Columbia.

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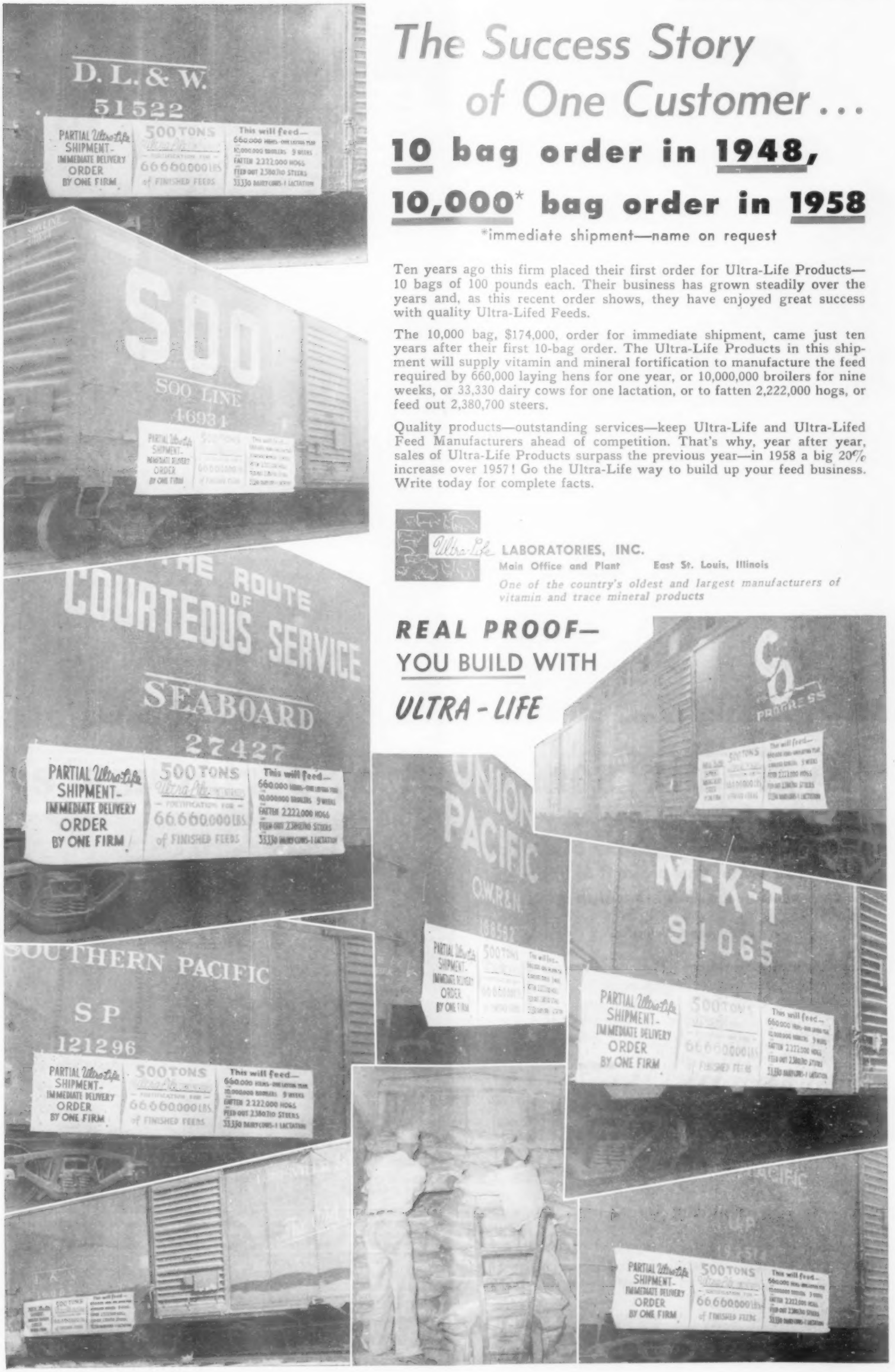

Lilly FEEDLOT INTERVIEW WITH PETE VELDKAMP, LUVERNE, MINN.

"Hygromix® sold itself by performance"

"You're more apt to follow a good practice when you prove it to yourself as we did," Minnesotan says.

by Eugene S. Hahnel

Pete Veldkamp, of Luverne, Minnesota, raises about 400 pigs a year. He weans his pigs at about four to five weeks and puts them on a complete feed containing Hygromix as soon as they'll eat. He's well satisfied with the results. "Hygromix sure did a good job taking care of worms . . . we don't have any bother with them now."

Just like a lot of other hog raisers, Pete Veldkamp proved the value of Hygromix feeds to himself. He had been worming with a liquid wormer twice a year. When he heard about Hygromix, he decided to see for himself how good it was. After his pigs had been on it, he test-wormed them at about 120 pounds. "We didn't see a worm . . . not a one!"

This story is being repeated all over the hog belt. Swine raisers have proved to themselves that Hygromix does kill worms and prevent them from laying eggs. They are convinced that Hygromix-fortified feeds give continuous, full-time protection against worm damage during the pigs' critical growing period.

Pete Veldkamp of Luverne, Minnesota, has a Missourian's attitude. "You've got to show me," says Pete. His Hygromix-fortified feed did just that.

Robert Peiper (left), feed manufacturer's representative, is using Pete Veldkamp's experience to back up his selling story about Hygromix in-feed worm control.

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SPECIALIZED SESSIONS

(Continued from page 16)

restricting flow. The amount of molasses that can be added depends on the formula and absorption power. In most cases, moisture content of the formula should be kept close to desired pellet moisture; it is important that almost all of the moisture picked up at the conditioner be flashed off in a good cooler. In conditioning, it is important to use as dry a steam as possible; wet steam will make the soft feed gummy.

When the formula is easy to pellet and a given die produces pellets too soft, we usually use dies that are thicker, that have larger holes, or a die with a tapered hole. Modern dies are harder and tougher than formerly, which decreases abrasion wear. In addition to fat in the feed, factors in pitting or corroding of dies include the degree of polish on the walls of the die holes. We believe there should be some kind of coating or plating on the surface of the hole.

Fat can be added to the outside of pellets by spraying it on the pellets as they pass through a spout between a pellet weigher and a rotary mixer. The pellets absorb the fat as they pass through the rotary mixer.

The pellets used for adding surface fat should be cooled and screened. In most cases a continuous weighing meter is used for weighing the pellets at the varying rates of pellet mill output. This continuous weigher transmits an air signal to a variable speed pump, which supplies the fat to the pellets. The meter transmits an air signal that is proportionate to the amount of pellets passing through the pellet weigher and controls the speed of the supply pump. The pump is a positive displacement pump, pumping fat in proper proportion into the pellet stream. Various percentages of fat are added by making an adjustment to the pump or drive. The fat is supplied from a surge tank where the temperature is 180°. The fat tank is above the proportioning pump so that there is a constant head of fat. The fat passes through a meter between the proportioning pump and fat sprays for control and checking the fat system, while the air signal is attached to a recorder for controlling and checking the pellet weighing system. By comparing the two check points, the operation has a method for checking accuracy. All fat lines must be steam-traced to prevent the fat from setting up.

The amount of fat that can be applied to the surface of the pellets depends on type of formula, temperature of fat and type of fat. Usually the percentage applied to the cold pellets is 2-6%.

In handling bulk pellets, slow moving equipment is preferable to help eliminate breakage. Also, small bins are preferable over large bins. Segregating of fines from pellets is a problem when handling pellets through one or more bins. Sometimes baffles in the bins can be used, or moving the spout at different locations while filling the bins, will help keep fines mixed with pellets. The condensation problem can be helped by venting bins, trucks and cars.

Discussion (comments and answers from panel members and persons in audience): There is more pelleting of complete feeds for hogs; we can expect more pelleting of complete rations in small mills. . . . Temperature of fat and ingredients and good mixing afterward are important in adding fat on pellets. As many sprays as possible, with small orifices, are important. A mixer works better than a tumbler on low levels; a slow speed paddle mixer, large in diameter is used, so that there is no break-up of pellets. . . . There were suggestions of coating the pellets with some material after fat is added to the pellets. . . . When molasses is mixed in the feed at the pellet mill in making a hard pellet, a larger pellet is better. Half-inch pellets can be handled in a vertical cooler. Some mills heat the feed to a high temperature so that it will absorb more. . . . A thin die and higher temperature in some cases is better than a thick die and lower temperatures in making good pellets.

HANDLING AND MIXING LIQUIDS — Robert C. Wornick, Chas. Pfizer & Co., Inc., Terre Haute, Ind., was chairman of this session, which included three talks plus discussion.

Batch Premixes with Three Liquids in Application—Robert F. Ambler, Ambler Milling Co., San Gabriel, Cal.: We use a batch liquid system to tie in with our batch mixing system. We have a Wenger 750 four-liquid multiblender equipped to handle molasses, fats and fish solubles or fish oils; it is set up so that other liquids can be added later. In effect this is a premixing system. Any combination of one to four liquids can be put into the dry carrier simultaneously. The carrier and liquids are blended into a premix which weighs about 400 lb.; this is conveyed to the proper mixer and blended with the balance of the 3,000-lb. mix. The liquid blending operation is controlled from a remote panel between the plant's two batch mix scales.

The Use of Liquids in Feed—Will Brooks, Illinois Farm Supply Co., Springfield, Ill.: We use fat, fish solubles, molasses and vitamin A oil in our feeds.

We have a batch plant except that it is continuous from the time molasses is added. Molasses is applied in a high speed mixer or in the pellet mills. From 1 to 30% is used in pellets, all made with a conventional pellet mill, a California Century. The dry mix is preheated.

Fish solubles are added in a horizontal batch mixer. Some balls result, but all feed goes through a dresser or high-speed blender.

From ½ to 5% of fat is added in the batch; the fat comes from a Wenger conditioning tank at 160°. A Hays impulse meter and electric counter are used; the system is controlled by the automatic panel board.

Using the Continuous Method for Liquid Ingredients — Richard Lucas, Allied Mills, Inc., Peoria, Ill., formerly with Walnut Grove Products Co., Atlantic, Iowa: Liquid storage should be at least 1⅓ times the size of the carrier used for shipment. These temperature ranges (the lower levels in summer and higher levels in winter) were used in the system at Walnut Grove Products: Fish solubles—80 to 90° in storage, 90 to 100° in working tank. Molasses—90 to 95° in storage, 110 to 115° in working tank. Fat—130 to 140° in storage, 140 to 160° in working tank. Components of the continuous liquid system are a high speed mixing or blending chamber, variable speed feeder for dry feed, an adjustable positive displacement pump.

Reasons for a high-speed continuous system include: No balls or chunks; minimum amount of contamination because of small size of mixing chamber and ease of cleaning;

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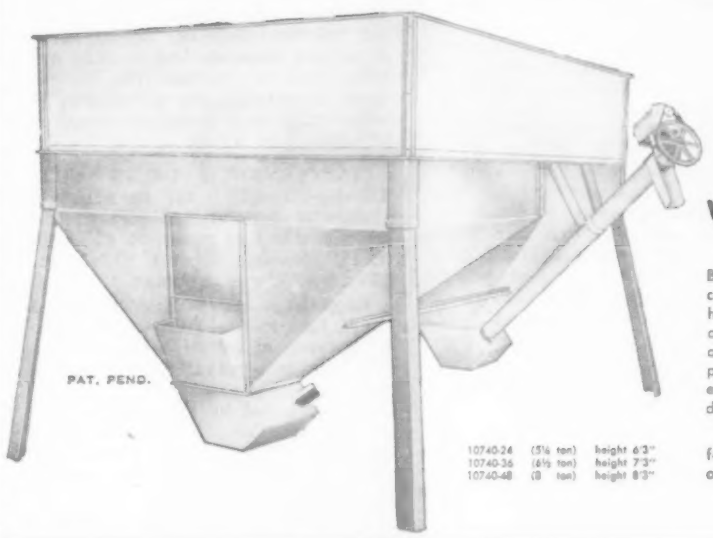

10740-24 (5⅓ ton) height 6'3"
10740-36 (6⅔ ton) height 7'3"
10740-48 (8 ton) height 8'3"

Because of the trend in the poultry industry to larger capacity houses and mechanical feeding, Lemanco engineers have designed a bin to give inside storage up to eight tons of feed even in areas where head room is limited. The base of this 10740 bin, as shown at left, is built in two compartments. When one compartment is emptied, the auger is easily switched to the other. Two augers are available if desired.

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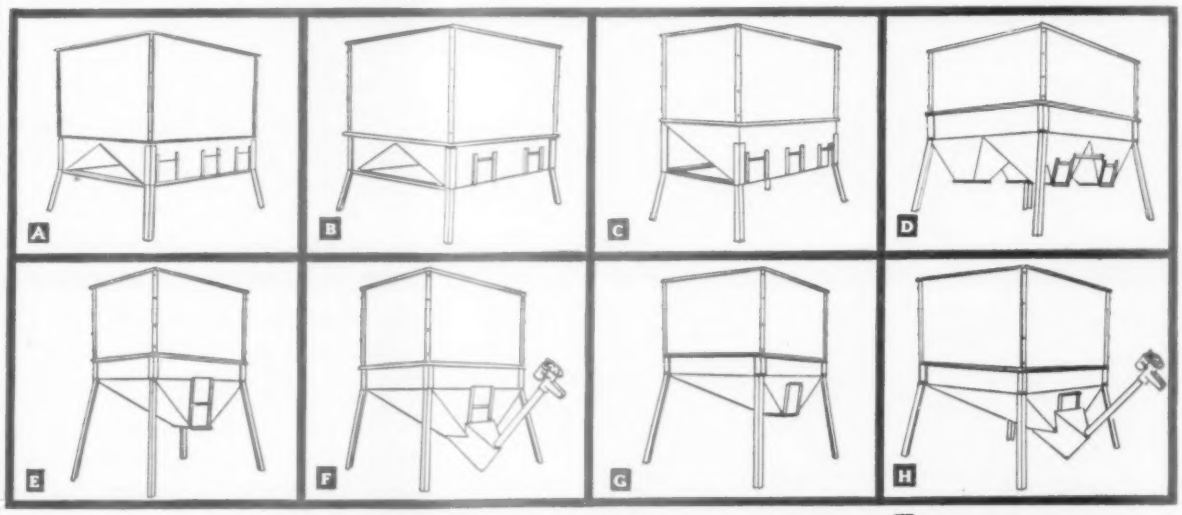

A 7618-48-6D 6 door (4 ton) height 7'0"
Three doors on side make for easy cleanout. Especially desirable for pullet and hen feeding.

B 7618-48-4D 4 door (4 ton) height 7'0"
6618-42 4 door (3 ton) height 6'6"
Popular all-purpose 4-door bulk feed bin.

C 7424-42 (2½ ton) height 7'2"
5424-24 (1¼ ton) height 5'6"
Designed for placing against wall or in corners where large capacity not required.

D 7736-36 (4 ton) height 7'6"
Side doors and bottom draw gates permit complete emptying of any type feed including mash of high fat or high fiber content.

E 7340-36G (3¼ ton) height 9'2"
7540-48G (4 ton) height 10'2"
Designed for over automatic feeder where head room is not a problem. If necessary to extend through roof, cover is available or plans furnished to build your own. These bins easily adapted for air delivery.

F 7540-36A (3¼ ton) height 8'0"
7540-48A (4 ton) height 9'0"
The large access doors and the pitch of the base make these excellent bins for all feeds.

G 7636-36G (4 ton) height 8'6"
7636-48G (5 ton) height 9'6"
These models, (illustrated G and H), are designed for locations where head room is limited but large capacity required. Bins are recommended for pellets and crumbles. Due to shallower pitch they are not recommended for mash.

H 7636-36A (4 ton) height 7'0"
7636-48A (5 ton) height 8'0"

SAVE FEED WITH THE Lemanco FEED BARROW . . . and TUBE SCOOP

The Lemanco Feed Barrow, especially designed for the poultry industry, makes the feeding operation easier for any member of the family, young or old. Built of heavy gauge steel and chrome plated handles, it is so balanced that it cannot tip over and spill feed. Carrying capacity 165 pounds. Oilite bearings and dual or single semi-pneumatic wheels. Dual wheels recommended for areas where soft litter used.

Companion piece to the Lemanco Feed Barrow, the Feed Tube Scoop, 9" x 6", weight one pound, designed primarily for filling tube feeders without spillage. Vent holes in bottom permit filling and emptying of scoop without sloughing of feed.

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can add all liquids simultaneously; high percentages of liquids possible. Over-mixing of liquids is a cause of wet feed because it usually increases the heat; it also divides the liqu'd into particles that are too fine, making caking inevitable. We feel an ideal mixing job is done when the liquid is blended to a point where it is divided into very small dust covered balls not visible under ordinary inspection. When this is done, you have a good dust-free appearance; yet the feed retains its free-flowing characteristics.

In the discussion period, the question was asked as to how much molasses can be included in a dairy feed and still handle the feed in bulk. Mr. Brooks said he was going to try 12%. A person in the audience said some types of bulk trucks can handle 25-27% molasses; difficulty may come in the next dry load that is hauled.

MICRO-INGREDIENTS — PREMIXING AND MIXING—Maxwell L. Cooley, Hoffman-Taff, Inc., Springfield, Mo., was chairman of a panel which included four talks.

Premixes Including Unidentified Growth Factors—Dr. W. J. Monson, The Borden Co., Elgin, Ill.: The use of unidentified growth factor sources in micro-ingredient premixes offers several advantages to the feed manufacturer. There are certain problems concerned with it, however, if the feed manufacturer desires to prepare the premix himself, using some of the common UGF sources.

UGF sources are natural candidates for use in premixes because of their similarity, in many respects, to micronutrients. The feed supplement manufacturer can provide these UGF sources in a form which can be conveniently used in dry premixes. There are many responsibilities of which the feed manufacturer can be relieved by allowing the feed supplement manufacturer to prepare the premix. Package size of the premix is governed by types of feed and whether all UGF sources in the feed are included.

Practical Approach for the Medium Size Feed Mill—James G. Pierce, Walnut Grove Products Co., Atlantic, Iowa: This paper dealt with the design and operation of a premix department in a medium size feed mill.

In the mixing operation, if the weight of the smallest item to be added to a premix batch is below 1% of the total weight, it is usually necessary to premix that item with some other portion of the premix, so two or more mixers are necessary. The smaller mixer should be about 10% of the capacity of the larger one. For complex mixing, one might have a 2,000-lb. main mixer, a 200-lb. primary mixer and a 20-lb. starting mixer. Guides to minimum and maximum effective capacities by volume are: (a) Twin shell blender with agitator, 20 to 80%; without agitator, 50 to 60%. (b) Ribbon type horizontal mixer, 50 to 70%. (c) Revolving drum-type mixer, 10 to 90%. (d) Interrupted ribbon or paddle type mixer, 50 to 70%.

Suggested rules in premixing include: (1) Carefully specify particle size of microingredients; this is for proper sequence of addition of microingredients to the formula. (2) Accurate weighing is a must. (3) Weighing should be done by weil trained personnel. (4) Maintain a rigid inventory. (5) Premix all ingredients that are less than 1% by weight of the total batch.

Purchased Premixes vs. In-Plant Mixing—Harry J. Konen, Feed Consultant, Houston, Texas: Proper and efficient handling of highly potent additives can only be accomplished through premixing. Because of its nature and the products involved, premixing has become highly specialized.

There are many good reasons why this task could well be delegated to the premix supply industry, including fitness and competence, simplicity, easier and more accurate inventory control and stronger quality control. However, experience has shown the feed manufacturer can also develop these same qualifications. Since in-plant premixing is intrinsically more versatile and flexible and often more economical, no hard-fast rule can be laid down as to which approach is most effective. Both plans will have strong adherents, with some possibility that specialized premix manufacturers will gradually become more widely accepted as microingredient fortification grows more complex.

For the smaller mill or the plant making a limited number of feeds, the purchased premix plan is most advantageous. Plants already well equipped for premixing may continue this practice. Some mills merge both plans; they operate on a basis of two or more highly concentrated "partial" premixes containing microingredients common to most formulas, with as few as possible active ingredients individually extended. Out of these are compounded various combinations of diluted premixes.

Dry vs. Liquid Additions—Dr. W. A. Glista, Wirthmore Feeds, Inc., Waltham, Mass.: For ease in application in the feed plant, addition of trace ingredients in liquid form is preferred to dry premixing. Advantages include better dispersion of the trace nutrient, less contamination of other feeds, superior application control and better inventory control.

A combination of liquid and dry premixes permits maximum flexibility. Where stability of the trace nutrient is a problem, application in dry form is generally preferred. In addition, trace nutrients are not readily soluble.

Liquid dispersion can be used in either line or batch operations. Its greatest advantage over dry mixing is in the large plant equipped with continuous mixers.

The major problem limiting utility of a complete liquid microingredient system is one of stability of antibiotics and vitamins.

Use of a liquid system requires an efficient liquids dispersions system, including solution tanks mounted on scales, accurate metering with positive displacement pumps and effective dispersion whether in a line or batch system. For application on the feed, methods include nozzles, perforated plates, rotating discs or a ringed device which encircles the feed stream.

Dr. Glista discussed specific applications and problems encountered with various fat soluble vitamins, water soluble vitamins, antioxidants, drugs and minerals (cobalt salts are being used in solution). The various trace ingredients are added dry, in water miscible preparations, in oil or in solution in water.

MAINTENANCE COST CONTROL—Procedures for an adequate system of maintenance cost control were outlined in a session of which J. D. Johnson, General Mills, Inc., Minneapolis, was chairman.

Objectives—W. A. Stohrer, Allied Mills, Inc., Peoria, Ill.: Although the importance of effective maintenance is readily recognized, it is not uncommon in many plants to see many items neglected for too long. The following steps should be followed for good maintenance, to maintain a plant at optimum production consistent with well controlled costs: (1) Maintenance requirements should be anticipated, with needed equipment and material in the right place at the right time. (2) A log or record should be kept on repairs on all items of equipment. (3) A record should be set up to enable comparison of maintenance cost and performance on similar machines. (4) Work should be scheduled by the maintenance supervisor for an orderly procedure. (5) A program of priority scheduling should be watched so as to do "first things first." (6) A follow-up on job completions should be made. (7) Checks should be made frequently on the performance of equipment serviced—beyond a certain point replacement of equipment is a better investment.

Responsibility for a good maintenance procedure should be assigned to the maintenance supervisor. Foremen or department heads should submit written reports for maintenance attention to equipment under their supervision. The supervisor should keep foremen and operators advised regarding performance standards on their machines.

Minimum records should include a card for each item showing purchase date, source and cost, frequency of service, nature of service and cost of service.

Preventing Excessive Maintenance Costs—Ralph D. Gray, Ralston Purina Co., Kansas City: Records are necessary to record the facts on maintenance procedure in order to build up a history which can be studied to determine causes of excessive maintenance. Major categories of excessive maintenance include:

1. Lack of engineering. This is often the result of not supplying sufficient specification information to engineers.

2. Excessive deteriorations. It is important to determine why these occur.

3. Lack of preventive maintenance. A preventive maintenance program is the backbone of any procedure, and it must include scheduled overhaul, scheduled adjustments and scheduled lubrication.

4. Improper operation of equipment. The best way to eliminate this is to provide adequate training of operators.

5. Inadequate communications. Without communication among all departments, all values of a maintenance procedure are lost.

Maintenance Cost Control Procedures — Roland W. Nichols, Eastern States Farmers Exchange, Huron, Ohio: That the cost of maintenance must be controlled is shown by the fact that the cost of labor for maintenance in our plant is 22% of all production labor costs. (This also includes such services as janitors and watchmen.)

We have devised a maintenance system aimed at better control and evaluation of expenditures. Following are objectives of the program: (1) Advance work planning and scheduling. (2) Determination of equipment requiring the most maintenance. (3)

To our many Friends
and Customers:

The employees of Landers Mill Manufacturing Company would like to say "Thank You" to the Officers of the Mid-West Feed School at Kansas City Nov. 12th to 14th, for inviting us to display our products.
We also want to thank our many customers who came by our display and so graciously told others about our products.
We were impressed by the School, especially the cost-accounting and records of Maintenance and Maintenance Inspection. We are looking forward to the 1959 school which will feature pelleting.

Thanks,
H. S. Landers, President

LANDERS MILL MANUFACTURING COMPANY

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Comparisons between manufacturers of similar equipment on the basis of maintenance. (4) Detailed accounting of all capital installations undertaken by the maintenance department. (5) Permanent record of all maintenance by individual machines. (6) A system including all of the above objectives without increasing clerical labor or costs.

A work order form was devised with space for the following information: (1) Work order number, (2) job description, (3) employee clock number, (4) time starting job, (5) time quitting job, (6) cost of materials and (7) cost of labor.

Operation of the system is as follows:

1. A work order form is initiated by the maintenance superintendent. One copy is kept in the maintenance office until the job is completed. The card and second copy go to the hourly rate foreman for assigning to employees.

2. Each employee pockets one of the remaining copies for reference and to use in drawing stock. He punches the starting time on the remaining copy or time card. Upon completion of a job, he punches the clock again.

3. As material is drawn from the stock room, a record is kept showing the work order number, material drawn and its value.

4. Daily, the cards go to the timekeeping department where value of the labor is determined. Value of materials is entered on the card also; information for this comes from the report forwarded by the stock clerk.

5. Cards ultimately are returned to the maintenance office where they can be studied by the maintenance superintendent and summarized and entered on the record card for the individual installation or machine involved. Information transferred from job card to individual machine card includes: Date of job, description, materials and value, value of labor and department involved, such as electricians.

REMODELING OF THE FEED MILL — John Heimovics, Jones-Hettelsater Construction Co., Kansas City, was chairman of a panel which discussed this subject. A paper on finished feed storage was presented, and the remainder of the time was spent in discussion. Two other papers, on bulk delivery and remodeling pelleting facilities, also were prepared for delivery and are in the production school proceedings.

Finished Feed Storage—Edward C. Brackney, Jones-Hettelsater Construction Co., Kansas City: Any bagged feed warehouse should be designed to accommodate lift trucks and pallets even though not used immediately. Principal requirements for this are a floor designed for a load of 300 lb. per sq. ft., a clear height of at least 16 ft., as few columns as possible. A prefabricated steel building is the most economical.

In handling bulk, many of the deliveries are by trucks, and careful consideration must be given to methods used. The most obvious solution is to erect a group of bins, but this also has some serious limitations. For one thing, you are constantly finding yourself needing more bins.

Another method is the use of one-ton boxes handled by lift truck. They may be stored in existing warehouse space, and the investment is quite modest. For a plant just starting bulk deliveries, the box method is often most desirable because of its flexibility and low initial investment. Later, bins may be added, with boxes used to supplement the bins.

The bulk bin should not be too large, or segregation will result as well as pellet breakage. Conveying and handling equipment should be as nearly self-cleaning as possible. Drag conveyors or pneumatic conveyors are better in this respect than screw conveyors. Greatest breakage of pellets occurs in a screw conveyor and least in a good drag conveyor.

Bulk Delivery—John Branch, Nutrena Mills, Inc., Kansas City: When a dealer and manufacturer start

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thinking about bulk, there are a number of things both must know: (1) Which feeds sell best in bulk; (2) amount that can be sold in bulk; (3) equipment needed to do the job; (4) distance from company mill; (5) delivery costs, from the mill and to the farmer; (6) area's growth potential.

Next comes consideration of available equipment. Regarding bulk delivery equipment — One type is the conversion or auger unit that attaches to the grain box, running upward from $1,000; a combination bulk and sack unit varies from $2,000 to $10,000, depending on size and unloading equipment used; a straight bulk truck, with auger or pneumatic unloading, ranges from $4,000 to $16,000.

Remodeling Pelleting Facilities — H. K. Worthington, Allied Mills, Inc., Peoria, Ill.: A single 100 h.p. mill makes a good single man packing and sewing station for 400 to 500 weights a minute. Two 100 h.p. pellet mills make a good two-man duplex scale and sewing station. Four 100 h.p. mills make a good double duplex four-man packing station, or rotary automatic packer application.

It is entirely practical to bank these mills and supply them directly from a modulating mixing line without intervening bins. Gravimetric proportioning feeders or batch continuous lines may do this.

There are considerations as important as the pellet mill itself:

1. An even continuous steam flow of constant temperature and pressure and automatic modulation for gas or oil to maintain pressure within a narrow range.

2. An even continuous flow of feed made possible by a single serving line without intervening bins, modulated to demand of pellet mills.

3. Generous drying and cooling capacity—about 12,000 c.f.m. per 100 h.p. mill and 100-120 sq. ft. of cooler screen surface minimum per mill.

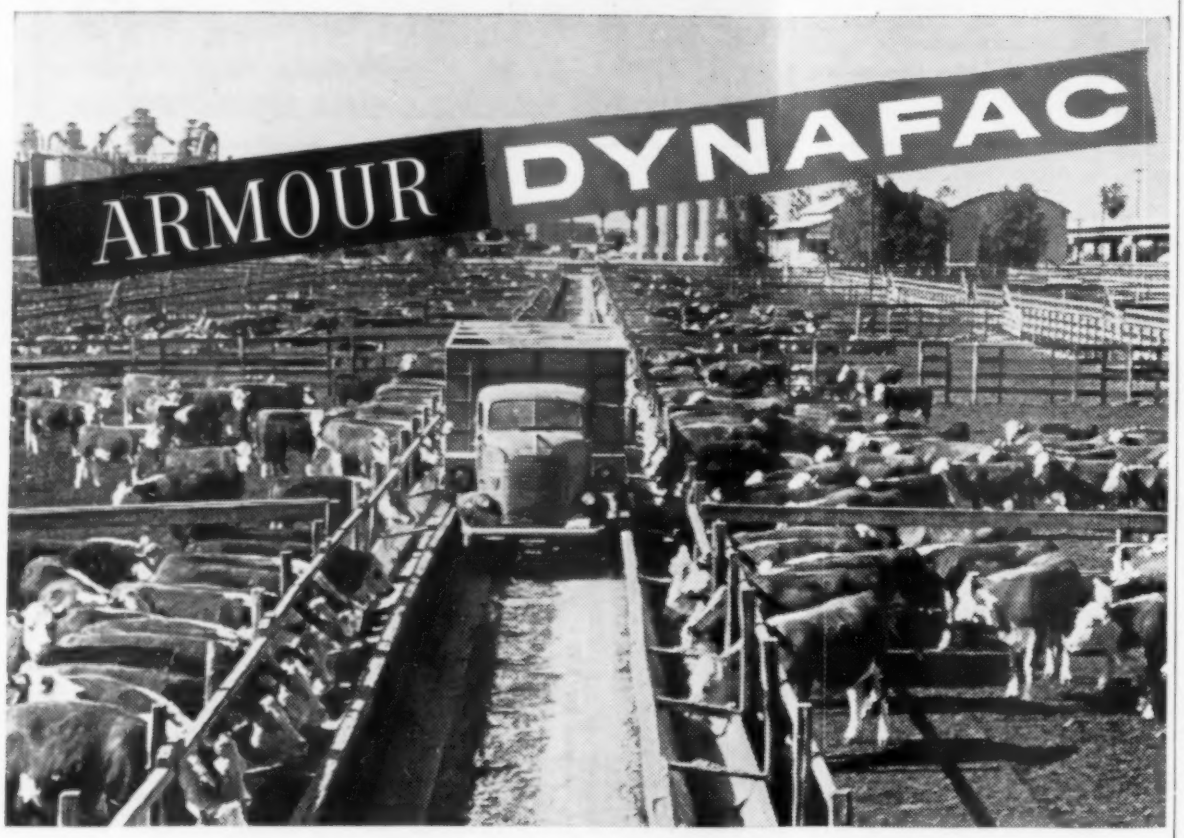
4. Adequate roll surface—at least 60 in. per 100 h.p. mill.

5. Good screening—at least 25 sq. ft. on each of three decks for each 100 h.p. mill.

We would favor increasing capacity of each pelleting unit rather than increasing number of units; would favor eliminating supply bins and increasing number of bins for bulk finished feed; would favor higher capacity, centralized packaging and in general a reduction in number of packing stations.

Discussion: In discussing various bulk handling methods, the storing of feed in bulk in flat storage in the warehouse was examined. In this method, trucks with a scoop are used for in-plant handling. A disadvantage is resultant poorer housekeeping.

Panel members repeatedly stressed the obvious need for greater long-range planning of facilities and future needs when making decisions on installations. Trends such as more pelleting, bulk handling, etc., were cited.



THE WESTERN FEEDLOTS REPORT . . .

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These are the comments being made by feedlot operators all over the West. They have proved it to themselves...and so can you...that feeding Dynafac gives bigger profits. That is because it takes less feed per pound of gain.

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Dynafac costs less than a penny a head per day! Feeders tell us they get their best weight gains and feed conversion feeding this low-cost additive at the 2-gram-per-head-per-day level.

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Dynafac is distributed nationally for Armour by the Chemical Department, McKesson & Robbins, Inc. Write us for further information.

A doctor was warning his patient that he should have regular habits. A hurt look in his eye, the man protested: "But I do, I do!"

"Well," asked the doctor, "how come I saw you with a well-stacked blonde at four this morning?"

"Oh, that," replied the patient. "That's one of my regular habits!"

◆ ◆ ◆

A Texan had a small farm with just a few sheep. One day his wife while dyeing some bedspreads had a little lamb fall into the bucket of dye. A passing motorist saw the lamb with the blue fleece and bought it for $50. So the Texan figured he had a good thing going and colored more lambs which brought big profits.

"Pretty soon," he recalled, "I was coloring them pink, blue, yellow, green, lavender and you know—now I'm the biggest lamb dyer in Texas."

A woman reported the disappearance of her husband to the police. "Is there any message you wish to give him if we find him?" they asked.

"Yes," she replied eagerly, "tell him mother didn't come after all."

◆ ◆ ◆

A woman's hat tells you something about her, including whether her husband was along when she bought it.

◆ ◆ ◆

A woman walked into a furrier's and said, "I would like a drop-dead coat."

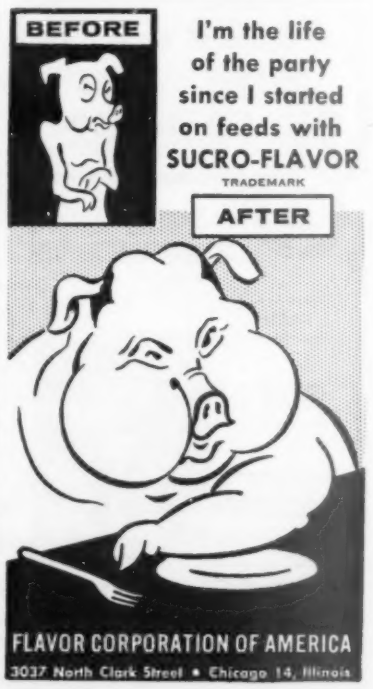
"What on earth is a drop-dead coat?" asked the furrier.

"A coat so that when my jealous neighbor sees it, she should drop dead."

◆ ◆ ◆

A friend of ours recently bought a foreign automobile and after careful computation over a month came to the conclusion that he was not getting the phenomenally high mileage so often credited to such cars. So he took it to a local mechanic who, after checking it thoroughly, pronounced it in perfect condition. "But isn't there something I can do to increase this mileage?" he asked.

"You can do the same as most foreign car owners do," replied the mechanic. "Lie about it."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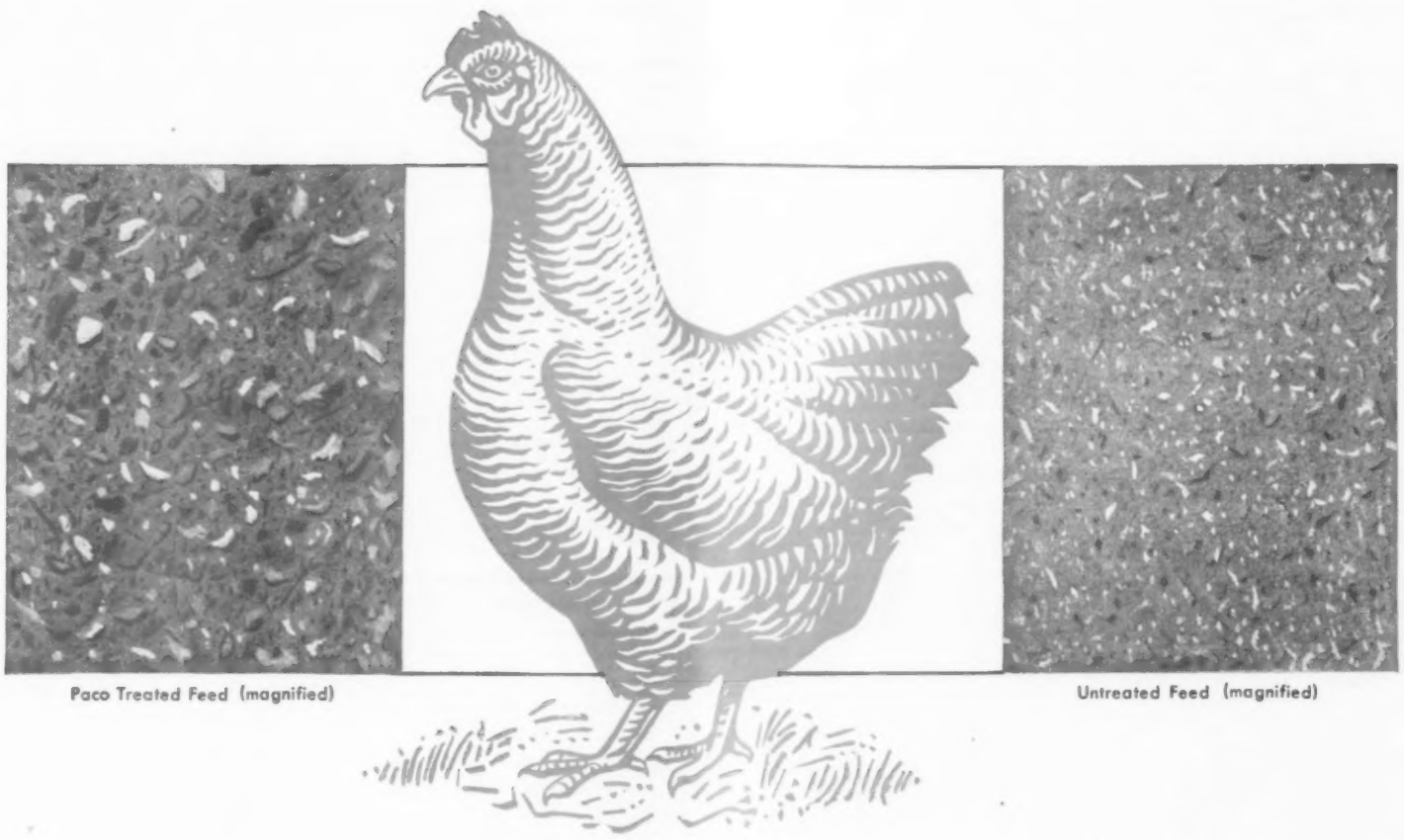

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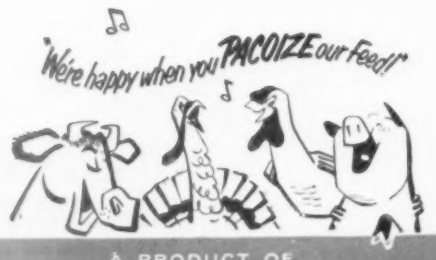

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Classified advertisements received by Tuesday each week will be inserted for the issue of the following Saturday. Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $10.50 per column inch. All Want Ads cash with order.

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Send resume or letter covering your qualifications to JOHN E. BEX, District Sales Manager.

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Have five old, four new, and plans to build more mills, need man who will engineer efficient feed production by planning improved and original machinery and equipment layout and supervising installation. Offer satisfying work relationship on staff of production manager who considers, credits and boosts ideas and effective work of associates. Offer development opportunity in steadily growing organization with solidly based security. Starting compensation as attractive as your qualifications and records. H. A. MacCord, Vice President-Production, Cooperative Mills, Inc., 2101 E. Fort Ave., Baltimore, Md.

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Position requires college degree in animal husbandry, with experience in ruminant nutrition or ranching.

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ASSISTANT TO FEED SALES MANAGER—Permanent position open with a reputable, large, well-known Pacific Northwest feed company. Age 30-40, with a general feed background, including agricultural college education, workable nutritional knowledge, farm and retail feed store management experience. Analytical mind and ability to trade in ingredient markets also important qualifications. Address Ad No. 4326, Feedstuffs, Minneapolis 40, Minn.

MAJOR MANUFACTURER OF BULK FEED delivery units needs aggressive, personable salesman to sell in central Midwest territory. Locate around central or southern Illinois. Salary plus commission. Car and travel expenses furnished. Paid vacation, insurance program, and other fringe benefits. Feed industry, truck or comparable sales experience desirable. Address Ad No. 4266, Feedstuffs, 612 Board of Trade Bldg., Kansas City 5, Mo.

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WHIRLAWAY AIRBLAST CAR LOADERS, cast iron pulleys, new and used feed and elevator equipment. Hagan Mill Machinery, P. O. Box 574, Jeffreson City, Mo.

FOR SALE—ENCLOSED MOTORS; RICHardson Scales; truck scales; hammermills; oat crimpers; horisontal and upright feed mixers; sewing machines; elevator legs; screw conveyors; molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

FEED MIXER, 1-TON CAPACITY, GUARanteed first-class throughout, 5 H.P. motor drive. Address Ad No. 3479, Feedstuffs, Minneapolis 40, Minn.

CHAMPION MOBILE GRINDER AND mixer units. Champion Portable Mill Co., 2105 Como Ave., Minneapolis 14, Minn.

WENGER HORIZONTAL PELLET COOLer with variable speed drive and fan. Ray L. Jones, Box 326, Benton, Ill.

100 H.P. BLUE STREAK HAMMERMILL, direct connected with controls, magnet and collector. Ray L. Jones, Box 326, Benton, Ill.

PELLET MILLS, 50 H.P. CALIFORNIA, with coolers and crumblizer; also Richardson Bagging Scales, animal fat tanks and molasses units. Ray Jones, Box 326, Benton, Ill.

SCHUTTE HAMMER MILL, 30 H.P., ENclosed 3-phase motor, little used, $1,200. Howe Hopper Scales, 3,000 lb. capacity, $900. Spearin, Salisbury, Md.; Tel. PI 9-7512.

SIDNEY NO. 347 SEED AND GRAIN cleaner with 40 screens, 9x15 three pair high roll; Blue Streak 6-A-C hammer mill with crusher-feeder, 75 H.P. direct connected motor; Calking 3-30 slurry treater; Gibson oat crusher, 85 bu. capacity. Write Ad No. 4250, Feedstuffs, Minneapolis 40, Minn.

AERATION FANS—5 TO 40 H.P., HIGH efficiency backward curve, non-overloading centrifugal type. Immediate shipment from our Fairmont, Neb., factory. Wheels and casings by American Blower, Buffalo Forge and Ilg. Write for price list and specification sheet. A-C-E Supply and Equipment Co., Inc., P. O. Box 540, Salina, Kansas.

BAUER NO. 182 SERIAL NO. 18492 MILL complete with dust collector, magnet, screens, on base with 60 H.P. Fairbanks-Morse 3,600 R.P.M. motor, Frame RS 405-S, Serial No. 572076. Good condition. Also have Bauer Attrition Mill complete with two 15 H.P. Wagner Motors, type BP, Model 17 T. Equipment available now, priced right. Phone or write Miami Feed & Grain Co., Sidney, Ohio.

NO. 3 SW JAY BEE MILL COMPLETE with base, coupling, magnet, screens, dust collector, pipe, 50 H.P. General Electric 3,600 R.P.M. motor with No. 29 Nickle crusher-feeder. Good condition. In service about four years. Also one grain drier No. 400 Habco Batch Drier complete with 15 H.P. motor General Electric and 7½ H.P. General Electric motor, gas fired, capacity rated 400 bu. In service one season, good condition. All equipment in service now. Write or phone Johnstown Elevator Co., Johnstown, Ohio.

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PNEUMATIC BULK TRAILER WITH 1,000 cu. ft. (20 tons) capacity—5 bins—like new condition. Manufactured by Dorsey. Also, 32' bag or bulk tandem trailer with air unloading system. Like new condition. Address Ad No. 4314, Feedstuffs, Minneapolis 40, Minn.

FOR SALE — ROBINSON ATTRITION mill, 30" size with two 40 H.P. General Electric motors, good condition with almost new 28" fan, also two General Electric starters, priced right. Phone or write Cady Implement & Grain, Deer Grove, Ill.

SALE — ALUMINUM TANKS, 4,000 GAL., 2,100 gal.; Spiral Ribbon Mixers 200, 75 cu. ft.; Dewatering presses: Davenport No. 1A, No. 2A, No. 3A. Louisville 5-roll 36"; six Louisville Rotary Steam Tube Dryers 6'x50', 6'x30', 6'x25'; screw conveyor, trough belt conveyor, bucket elevator, bins, etc. Perry, 1403 N. 6th St., Philadelphia 22, Pa.

SITUATIONS WANTED

EXPERIENCED SALES MANAGER WITH proven ability to organize, train and direct successful sales force. Good writer. Ability to create and promote programs that sell. Degree in animal husbandry. Best references. Address Ad No. 4265, Feedstuffs, Minneapolis 40, Minn.

FEED SALES MANAGER WITH SOLID big-company background in all phases of feed merchandising seeks connection with medium-sized firm. Very strong in advertising, promotion, sales training. Best references. Salary open, will relocate. Address Ad No. 4309, Feedstuffs, Suite 3214, 551 Fifth Avenue, New York 17, N. Y.

NUTRITIONIST DESIRES POSITION IN livestock or feed industry with production or with research. Bachelor's degree in animal husbandry and master's in animal nutrition. Considerable cattle feeding and farming experience. Two and one half years' experience teaching agriculture. Age 31. Married. Prefer Midwest or Western location. George Breniman, Windsor, Colo.

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ALL KINDS OF GOOD USED GRAIN processing machinery. E. H. Beer & Co., Inc., Baltimore 2, Md.

WANTED — ONE 14" BAGGING NOZZLE for Richardson GGG38-Molasses Feed Scale, Selma Soybean Corporation, Selma, N. C.

PRATER BLUE STREAK HAMMERMILL— Model G7C or G8C with motor. Price all important. Gasco, 1506 Eastern, Kansas City 26, Mo.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

MISCELLANEOUS

FEED GRAINS—BARLEY, OATS, CORN, alfalfa meal. Truck shipping only. All truckers and buyers welcome. B. W. Goetz Brokerage, Route 1, Lindsey, Ohio; Phone MO 5-2442.

BUSINESS OPPORTUNITIES

FOR SALE — GRAIN ELEVATOR AND feed mill. Inquire Woodhull Co-op. Grain Co., Woodhull, Ill.; Phone YEllowstone 4-3711.

FEED MILL FOR SALE—LOCATED IN Noel, Mo., on K.C.S. railroad in good broiler and dairy section. Have J. B. Hammermill with 100 H.P. motor, one roller mill, two feed mixers, one molasses mixer, sewing machine, two elevators, overhead bins and truck scales. Price $16,000. Dow Adcock, Hiwasse, Ark.; Phone Gravette, Ark., State 73752.

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Halbert C. Smith Plymouth, Ind.

Hearings on Changes In Grain Standards Set

WASHINGTON — Informal public hearings to consider proposals to revise the official grain standards of the U.S. for corn and oats and to cancel the official grain standards of the U.S. for feed oats and mixed feed oats have been announced by the U.S. Department of Agriculture.

The hearings will begin at 1:30 p.m. at the places and dates indicated: Dec. 9—Room 660, Board of Trade Building, Chicago; Dec. 11—Room 100, Minneapolis Grain Exchange, Minneapolis.

Proposed revisions of the corn and oats standards would change the limits for certain of the quality factors in the standards and should result in an improvement in the average quality of the various grades of corn and oats marketed. The proposed cancellation of the feed oats and mixed feed oats standards would eliminate standards which are rarely used.

Most important proposed revisions in the corn standards are a change from water-oven to air-oven as the basic method for determination of moisture content, and an increase in minimum test weight per bushel requirements in the several numerical grades.

Major proposed changes in the oats standards are an increase in the minimum test weight per bushel requirements in the several numerical grades and in the special grades heavy oats and extra heavy oats, a reduction in the minimum moisture content limit for tough oats, and elimination of the special grades medium heavy oats and special red oats.

Interested parties may submit written data, views, or arguments to the Director, Grain Division, Agricultural Marketing Service, U.S. Department of Agriculture, Washington 25, D.C., not later than Dec. 22, 1958.

Iowa Reports Tonnage For First Half of '58

DES MOINES—Mixed feeds sold in Iowa during the first six months of 1958 totaled 962,439.78 tons and ingredient type feeds sold totaled 670,333.50 tons, according to a recent report by I. Levin, state chemist with the Iowa Department of Agriculture.

The figures were compiled from the Iowa feed tonnage inspection fee reports filed with the department.

Mr. Levin pointed out that on the basis of fees received, 1,324,513 tons were reported as sold in Iowa during the first half of 1958.

Swine feed supplements led the report on mixed feeds with a total of 231,695.41 tons. Beef cattle supplements were second with 145,796.09 tons. (See table for totals of other mixed feeds.)

Among ingredient-type feeds, soybean products led the list with 257,504.14 tons. Following this were wheat and wheat products, 70,134.30 tons; linseed and flax products, 54,894.73; minerals (total), about 47,000 tons; alfalfa products, 28,849; animal products, about 82,700; antibiotics and antibiotic mixtures 3,399 tons.

Others were: oats and oat products, 13,939; yeast and yeast cultures, 1.133; corn and corn products, 11,197; cottonseed products, 9,916; milk products 7,565, and marine products 5,834.

Iowa Mixed Feed Tonnage Report for First Half 1958

Chicken feeds (complete feeds)	86,808.71
Chicken feeds (supplements)	125,670.37
Turkey feeds (complete feeds)	28,646.58
Turkey feeds (supplements)	21,691.48
Swine feeds (supplements)	231,695.41
Swine feeds (complete feeds)	113,090.78
Beef cattle feeds (supplements)	145,796.09
Beef cattle feeds (complete feeds)	16,317.69
Dairy cattle feeds (supplements)	30,956.15
Dairy cattle feeds (complete feeds)	7,076.92
Calf feeds	4,999.68
Sheep feeds (all types)	672.06
Horse feeds (all types)	234.63
All purpose feeds	13,715.63
Dog foods (wet)	3,601.61
Dog foods (dry)	4,169.92
Pet foods and other animal foods	2,489.84
Mineral feeds	24,137.07
Custom feeds	100,669.16
Total	962,439.78

Need for Better Management in Feed Firms Cited

MADISON, WIS. — Many wholesale feed firms in Wisconsin need to do a better business management job if they want to compete with other firms and with integrated operations, according to two University of Wisconsin agricultural economists.

Henry Bakken and F. C. Temple base their statement on a survey of 40 wholesale feed organizations.

The researchers say that some firms are hurting their chances of staying in business by failure to apply sound business practices. In many cases, they said, firms suffer because they don't protect themselves against market price changes. The researchers report that although feed dealers often maintain large inventories of grain, only a few protect their investment against falling prices by using futures contracts.

Here's what the economists said can happen to an unprotected feed firm:

Suppose the firm manager buys 5,000 bu. corn in May for $1.22 bu. Two weeks later the price of corn drops 4¢. Fearing further decline in price, the manager sells the 5,000 bu. for $1.18 bu. His firm loses $200 from the transaction.

Hedging Avoids Loss

By hedging on the futures market the manager could avoid this loss, they said. Here's what would happen if the manager hedged the purchase, according to Mr. Bakken and Mr. Temple.

Immediately after purchasing the corn the manager contacts a broker and has him sell 5,000 bu. on the September futures market. The dealer now "owes" the futures exchange 5,000 bu. corn, to be delivered in September at $1.25 bu.

When he sells the grain he loses $200 because of the decline in market price. However, the futures market falls by about the same amount so he can buy back his futures contract at a saving of around $200. His loss in the cash market has been offset by a $200 profit in the futures market.

The feed man doesn't make money on the transaction, but he is able to continue processing and selling grain without worrying about a loss from falling grain prices, they said.

Mr. Bakken and Mr. Temple stress that hedging is simply a type of insurance which businessmen should use to cut down the risk in wholesale feed operations.

Credit Problems

The researchers found that unwise credit policies cut into the operating margins of many firms. They point out that granting credit to customers seems to be an important element in the wholesale feed business, but many dealers should use more caution.

Key to a sound credit policy, say Mr. Bakken and Mr. Temple, is speedy collection of accounts and classification of debtors. They feel that an interest charge on accounts should be assessed after a reasonable time, and discounts offered for cash sales.

New credit applicants should be carefully interviewed so the manager can determine their capacity to repay the debt, they said. The firm's credit policy should be explained orally as well as in writing.

Financing of feed and grain purchases for customers by the Federal Intermediary Credit Bank or Production Credit Assns. was also suggested as a possibility dealers could consider.

Studies by U.S. Department of Agriculture economists show that large dealers stand to operate more profitably than small dealers, they point out. So small dealers faced with competition from a more efficient dealer are likely to grasp at various ways to attract and hold customers.

But the economists warn that managers considering such "extra services" should determine just what services are needed, whether they can supply them adequately, and whether the increased business they can expect would offset the additional costs of the service. For instance, operation of a mobile feed mill—to go around and grind feed right on the farms—would be a paying proposition for some firms and a money-losing idea for others.

Memphis Agricultural Club Elects President

MEMPHIS, TENN.—A. E. Bolton, Bolton Bagging Co., has been elected president of the Memphis Agricultural Club, succeeding Edward Jones.

Other officers named at the Hotel Chisca meeting were Hubert Kiersky, first vice president; Ernest McDonald, second vice president, and T. P. Head, secretary-treasurer.

During the meeting, opportunities for swine production in the Mid-South were discussed. "Meat packers in this area have to go to Iowa and the Corn Belt to buy a majority of hogs for slaughter, thus depriving the section of considerable income," Ed Synar, Wilson & Co., and Robert Moorman, Ames Plantation, Grand Junction, Tenn., told club members. "Yet farmers can get as much for hogs at Memphis as elsewhere and produce them as cheaply as in other areas."

Dwayne O. Andreas

COUNCIL PRESIDENT — Newly-elected president of The Chemurgic Council is Dwayne O. Andreas, it has been announced by Wheeler McMillen, vice president of the Farm Journal and chairman of the council. Mr. Andreas is chairman of the Honeymead Products Co., Mankato, Minn. He is also a member of the executive committee of the National Soybean Processors Assn., chairman of the trade development committee of the Soybean Council of America, secretary of the fats and oils advisory committee of the U.S. Department of Agriculture, president of the Andreas Foundation and a member of the Chicago Board of Trade and the Minneapolis Grain Exchange. The Chemurgic Council promotes research to develop markets and uses for agricultural products and new crops for areas now producing surpluses.

Minnesota Marketing Act Proposal Tabled

ST. PAUL, MINN. — A proposed Minnesota agricultural commodities marketing act which would have provided enabling legislation by which producers of any agricultural commodity could initiate a marketing order for their industry was tabled at a recent hearing.

The action, taken by the Minnesota legislative interim commission on agricultural problems, followed a hearing in the state capitol here at which vegetable canners, meat packers, grain, dairy, livestock marketing and poultry and egg industry spokesmen voiced strong opposition to the measure.

Honey producers in Minnesota had requested the law initially.

Opponents of the plan said it would put industries—particularly those engaged in interstate sales—at a disadvantage with competitors in other states and would discourage expansion of industry into Minnesota. They also argued that the act would increase the margin between farmer and retailer.

Proponents said the law would serve to upgrade Minnesota products being shipped out and would create consumer demand for Minnesota products.

Washington Speakers

PULLMAN, WASH. — Researchers from several industrial laboratories over the country will be among the instructors at the Stockmen's Short Course to be held Dec. 7-12 at the Washington State College campus here. In addition to those already announced (Feedstuffs, Nov. 8), industrial researchers on the list of instructors include Dr. Ralph Soule, Chas. Pfizer & Co., Terre Haute, Ind. Other industrial representatives who will act as instructors are Paul Mattson, Morton Salt Co., Seattle, and D. L. Burgoyne, E. I. duPont de Nemours & Co., San Francisco.

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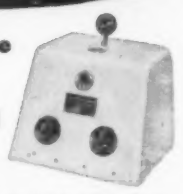
New Vitascope Tests Grain & Seed in 5 Minutes



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Now — New
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and
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are even higher in digestive enzymes based on latest experimental data. These products carry a number of Enzymes, including Proteolytic (action on proteins), Amylolytic: Zymase, Maltose and Invertase (action on starches, sugars and fiber), Catalytic, Lactic Ferments and others.
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ADDITIVES

(Continued from page 1)

FDA said publication of the list would enable qualified authorities to give their advice as to whether further testing is necessary for these additives. The list includes a number of materials previously sanctioned by official standards for use in specific food products. Such commonly used substances as salt are not listed.

Partial Compilation

FDA said the list was a partial compilation. Other food chemicals may be added if they meet legal criteria for exemption—that is, if they are generally recognized as safe for intended use. If an additive does not fall into this category, it must be tested to establish its safety and cannot legally be used in food until this is permitted by an FDA regulation.

(The first petition for a safety tolerance under the new additives amendment was for a chemical to be used in feed. It is the antioxidant Santoquin, for which clearance was asked for use in dehydrated alfalfa and other forages.)

The proposed food additive regulations do not attempt to spell out in detail the type of scientific studies which must be made to determine safety of a non-exempt additive. They state that FDA will evaluate safety data on the basis of criteria established by the food protection committee of the National Research Council unless equally good or better methods are proposed.

The proposed regulations resemble the existing new drug regulations with respect to material required to be submitted. A petition for a food additive regulation must include a complete history of the material, its composition, source, stability data, proposed quantity and method of use, control procedures and appropriate tests to determine the amount of the additive in the finished food or any substance formed because of its use. Full reports must be included on animal or other biological experiments to determine safety of the additive.

Feed Example Cited

FDA said the proposed regulations take into account that a chemical may be a new drug under the law as well as a food additive. For example, use of a medicated feed may produce a residue of the drug or its reduction products in the meat, milk or eggs. Administration of the drug to the animal is a new drug matter whereas the residue of drug in the animal products is a food additive matter. Only one petition need be filed in compliance with both the new drug and food additive sections of the FDA law.

When a petition has been filed, a notice will be published in the Federal Register setting forth the nature of the proposed additive and its use. When the regulation is issued, it, too, will be published. It will state the quantity of the additive and its permissible uses.

The amendment will become effective in its mandatory provisions on March 5, 1959.

Conference Held

Meanwhile, a conference to discuss the additives amendment was held this week in Washington under the co-sponsorship of FDA and the Food Law Institute, New York. The institute generally represents attorneys who have had practice or have been previously employed in FDA in federal legal capacity.

The conference covered various aspects of the additives amendment.

One of the speakers was Dr. John L. Harvey, deputy commissioner of food and drugs in FDA. Some of his remarks of interest to the feed industry included the following:

"We have taken into account the fact that products which may become food additives are also subject to other provisions of the Food, Drug and Cosmetic Act. We recognize that a product intended to be fed to animals is a drug or a new drug and may become a food additive if the effect of its being fed to animals is to produce meat, milk or eggs which contain components derived from the additive used in the feed. We have outlined a procedure that will make it necessary for new drugs or additives of this nature to be dealt with only once. If a new drug application is filed and it is apparent from its nature that it must also be considered under the food additives amendment, it will be so considered.

"We have not made new drug applications effective for veterinary products where there may be a residue carried over into meat, milk or eggs unless there has been submitted with the new drug application adequate data on the residue in the food product. This situation is unchanged by the amendment although a single petition may lead to an effective new drug application and a regulation under the food additives amendment. In every way possible, we seek and shall seek to avoid complexity and to make the problem of securing all clearances necessary as simple as possible for the applicant."

Another speaker, Arthur A. Checchi, assistant to the deputy commissioner, said, in part:

"The regulations recognize the fact that there will be instances where a new drug application will also involve a food additive matter. For example, the use of a medicated feed intended for growth stimulation could well result in the residue of the drug or one of its reduction products in edible animal by-products. The administration of the drug to the animal is a new drug matter whereas the residue of drug in the edible animal by-product is a food additive matter. Under the regulations we establish a procedure whereby a petitioner need file but a single petition, in this instance a new drug application. When our New Drug Branch receives an application which it finds will also involve a food additive matter, it shall so notify the applicant and advise him that the matter is also being processed simultaneously under the food additives amendment. Where both new drug and food additive questions are involved, a food additive regulation, where appropriate, will be published simultaneously with the effective date of a new-drug application."

INTEGRATION

(Continued from page 1)

university will try to help solve some of the problems.

Agriculture in Ohio is an expanding industry—not a declining one as some have proclaimed, he said. One out of three workers in Ohio is dependent for his income from the food dollar.

Technological "Explosion"

A technological explosion is occurring in agriculture, Dr. Smith said. The changes incident to this technological development are largely the cause of the so-called farm problem. Farmers have had difficulty in adjusting to the technological changes which have been taking place the past 20 years and which will continue for the next 20 years.

Vertical integration is one of the methods which have been a part of the adjustment to the new form of agriculture. Production and marketing of agricultural products have been and are out of gear and integration will result as an attempt to get them in balance.

Dr. Smith said two thirds of the large feed companies in the East have some sort of contract growing of livestock and poultry.

Dr. John W. Sharp, associate professor, agricultural marketing, OSU, moderator of a four-man panel, in answer to a question from the audience, said dealers should not all rush home and get into integration without first studying their individual problems. Such action would result in complete chaos, he said. He added further that while the panel presentations might make it appear the university favored vertical integration, such was not necessarily the case.

Members of the panel included Dr. John H. Sitterley, professor, farm management, OSU; Dr. E. F. Baumer, associate professor, agricultural marketing, OSU; Dr. Paul Clayton, assistant professor, agricultural marketing, OSU, and Dr. Richard R. Newberg, associate professor, agricultural marketing, OSU.

Dr. Sitterley, in answer to an audience question, said he sees no immediate development of monopoly as a result of integration, but conceded it might occur if certain combinations that would block effective competition should develop. Good management is not guaranteed by vertical integration, nor is bad management prevented, a panel member pointed out.

Competition for Feed Sales

Dr. M. E. Cravens, professor, agricultural marketing, OSU, was a luncheon speaker on the subject "What Does Vertical Integration Do to Competition for Feed Sales?"

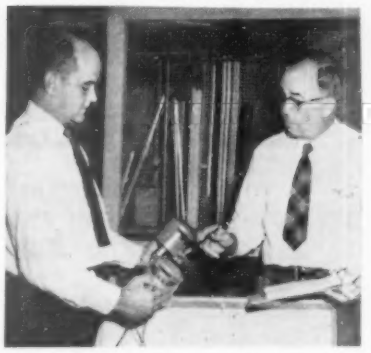
"The history of the American economic system is one of continued change resulting from more or less effective competition," he said. "The rapid development of vertical integration in the feed and feeding field is one more stage in this development for agriculture. Only time will tell whether it is sound and will stay. I think it will, since it is essentially market oriented, producing for markets and organizing the marketing to take full advantage of efficient production.

"The independent dealer will be forced either to perform more integration functions, join an integrated system or slowly lose business. This means that he will have to: (a) grow large enough to handle large feeding accounts efficiently; (b) work more with other independent dealers; (c) improve quality and quantity of research, business management services, feeding know-how, and general attitude of serving his customers; (d) understand, preach and practice the art of producing and marketing the quality, type and quantity of product desired by the market; (e) be astute enough to realize his limitations in financing production or other risk-increasing functions.

More Knowledge Needed

"It might even be possible that individual dealers or associations of dealers would use college graduates or even Ph.D.'s in providing specialists in sales and services to equal or better those of their competition. One way or another, the dealer must provide more knowledge on the operation than the grower already possesses if the integration is to succeed and if he, as a dealer, is to grow.

"The development of monopoly in the feed or feeding industry does not appear likely to me in the near future. Perhaps the best deterrent to this is the development of strong independent dealers and dealer groups."



EGG GRADING—The Northeastern Poultry Producers Council (NEPPCO), Trenton, N.J., has prepared three kits of egg quality and grading equipment for use throughout the northeastern region by qualified agencies. The equipment is made available to meet the demand of local and state schools. It is also used in the annual four-day egg quality and grading school sponsored by NEPPCO. In the picture, Harry Stults (left) of the NEPPCO staff and Dr. Alfred Van Wagenen, managing director, check over one of the sets of equipment before shipping the kit to a school in the 14-state NEPPCO area.

BUFFERS AND NEUTRALIZING AGENTS
Acetic acid
Aluminum ammonium sulfate
Aluminum sodium sulfate
Aluminum potassium sulfate
Ammonium bicarbonate
Ammonium carbonate
Ammonium hydroxide
Ammonium phosphate (mono- and dibasic-)
Calcium carbonate
Calcium chloride
Calcium citrate
Calcium gluconate
Calcium hydroxide
Calcium lactate
Calcium oxide
Calcium phosphate
Citric acid
Lactic acid
Linoleic acid
Magnesium carbonate & magnesium oxide
Oleic acid
Potassium acid tartrate
Potassium bicarbonate
Potassium carbonate
Potassium citrate
Potassium hydroxide
Sodium acetate
Sodium acid pyrophosphate
Sodium aluminum phosphate
Sodium bicarbonate
Sodium carbonate
Sodium citrate
Sodium hydroxide
Sodium phosphate (mono-, di-, tri-)
Sodium potassium tartrate
Sodium sesquicarbonate
Sulfuric acid
Tartaric acid

COLORS
Caramel
Carbon black
Charcoal
Titanium dioxide
Ultramarine blue

PRESERVATIVES

SEQUESTRANTS
Calcium acetate
Calcium chloride
Calcium citrate
Calcium diacetate
Calcium gluconate
Calcium hexametaphosphate
Calcium phytate
Citric acid
Dipotassium phosphate
Disodium phosphate
Monocalcium acid phosphate
Monoisopropyl citrate
Potassium citrate
Sodium acid phosphate
Sodium citrate
Sodium diacetate
Sodium gluconate
Sodium hexametaphosphate
Sodium metaphosphate
Sodium phosphate (mono-, di-, tribasic-)
Sodium potassium tartrate
Sodium pyrophosphate
Sodium tartrate
Sodium tetrapyrophosphate
Sodium tripolyphosphate
Tartaric acid

ANTIMYCOTICS
Calcium propionate
Potassium sorbate
Propionate acid
Sodium propionate
Sodium sorbate
Sorbic acid

ANTIOXIDANTS
Ascorbic acid
Ascorbyl palmitate
Calcium ascorbate
Erythorbic acid
Sodium ascorbate
Tocopherols

GENERAL
Acetic acid
Citric acid
Phosphoric acid
Sorbitol

MISCELLANEOUS
Aluminum sodium sulfate
Aluminum sulfate
Butane
Calcium phosphate, tribasic
Carbon Dioxide
Carnauba wax
Glycerin
Glycerol monstearate
Helium
Magnesium carbonate
Magnesium hydroxide
Monoammonium glutamate
Nitrogen
0-0-8
Propane
Propylene glycol
Triacetin (glyceryl triacetate)
Tricalcium phosphate
Sodium carbonate
Sodium phosphate
Sodium polyphosphate

NONNUTRITIVE SWEETENERS
Calcium cyclohexyl sulfamate
Calcium saccharin
Saccharin
Sodium cyclohexyl sulfamate
Sodium saccharin

NUTRIENTS
Ascorbic acid
Calcium carbonate
Calcium oxide
Calcium pantothenate
Calcium phosphate (mono-, di-, tribasic-)
Calcium sulfate
Carotene
Ferric phosphate
Ferric pyrophosphate
Ferric sodium pyrophosphate
Ferrous sulfate
Iron, reduced
l-Lysine monohydrochloride
Niacin
Niacinamide
Q-Pantothenyl alcohol
Potassium chloride
Pyridoxine hydrochloride
Riboflavin
Riboflavin-5-phosphate
Sodium pantothenate
Sodium phosphate (mono-, di-, tribasic-)
Thiamine hydrochloride
Thiamine mononitrate
Tocopherols
A-Tocopherol acetate
Vitamin A
Vitamin A acetate
Vitamin A palmitate
Vitamin B_{12}
Vitamin D_2
Vitamin D_3

STABILIZERS
Agar-agar
Carob bean
Carrageheen
Guar gum

EMULSIFYING AGENTS
Acetyl tartaric acid esters of mono- and diglycerides, except lauric
Mono- and diglycerides, except lauric
Monosodium phosphate derivatives of mono- and diglyercides, except lauric
Propylene glycol

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Denver: Demand steady; trend fair; supply good; 2,250 A, 300 D 21¢ lb.

New York: Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13½@15½¢, 1,500 A 15½@17¢, 2,250 A 17½@20¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢; f.o.b. Massachusetts, New York or Pennsylvania.

Chicago: Demand fair; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 7@8¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Boston: Demand light; supply good; 400 D, 3,000 A 20¢ lb.; 300 D, 3,000 A 19½¢; 300 D, 1,500 A 16½¢; 300 D, 2,250 A 18¢; 600 D, 1,500 A 17½¢; 300 D, 750 A 14½¢; 75 D, 750 A 14½¢.

Minneapolis: 10,000 A 35¢ lb.; 300 D, 2,250 A 21½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 75 A 18½¢ lb.

ALFALFA MEAL

Philadelphia: Demand and supply fair; 17% dehydrated $60.50.

New Orleans: Demand fair; trend steady; supply adequate; 17% $61@62; pellets $56@57.

Ft. Worth: Demand fair; supply sufficient; 17% protein dehydrated $55, delivered Ft. Worth area, truck; Kansas dehydrated, 17%, 100,000 A $58.80, rail; suncured, 13% No. 1 ¼-in. grind $59, truck.

Portland: Demand steady; supply ample; trend unchanged; suncured, 15% $46; dehydrated $68.

Seattle: Demand fair; trend firm; supply good; 15% protein suncured $44, truck loads; 136,000 A unit dehydrated $69, truck loads.

Minneapolis: Good demand and supply, but firmer price with reground pellets, 17% protein, 100,000 units vitamin A $51, bulk; oiled reground $55, bulk.

Chicago: Demand fair; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $56@56.50; 13% No. 1 fine ground $43.

St. Louis: Demand slow; trend steady; supply ample; suncured, fine, 13% $39.50; 17% dehydrated, 100,0000 A $57.

Kansas City: Demand active, especially for forward, also interest from dehydrators; trend steady; supply adequate; dehydrated alfalfa with 17% protein and 100,000 units vitamin A guaranteed on arrival; regular meal $49, sacked, little available; reground pellets $51@52, sacked; oil meal $53@54, sacked; pellets $45@47, bulk; 18% protein 125,000 A meal $55.50@56, sacked; non-guaranteed A meal $44, sacked; suncured meal, demand is slow with supplies adequate, prices unchanged, No. 1 fine ground $32@34, No. 1 ¼-in. $31@32, No. 2 ¼-in. $30@31, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $59@63.

Los Angeles: Demand fair; trend steady; supply adequate; dehydrated meal, 17% protein, 100,000 A $49; dehydrated pellet meal, 17% protein, 100,000 A $51; suncured crumbles, 15% protein $43@44; suncured meal, 15% protein $41@42.

Omaha: Demand fair; supply ample; 17% dehydrated, 100,000 A units, bulk pellets $45; sacked meal $50, both Omaha basis.

Denver: Demand fair; trend steady; supply ample; dehydrated $46.

Boston: Demand and supply steady; dehydrated, 17% $62; suncured, 13% $48, nominal.

Buffalo: Demand and supply fair; trend steady; $65, Boston.

ANIMAL FAT (STABILIZED)

New Orleans: Demand fair; trend steady; supply adequate; 7½@8¢ lb., tank cars.

Ft. Worth: Demand fair; supply adequate; prime tallow, tank cars 8¢ lb.; drums 9½¢ lb., f.o.b. north Texas packing plants with returnable drums.

San Francisco: Demand fair; supply ample; bleachable fancy 8¾¢ lb.; yellow grease 7½¢ lb.

Kansas City: Demand slow from feed trade, good for soapers; trend steady; supply adequate; 7¾¢ lb., tank car, for prime tallow.

Chicago: Demand good; supply fair to good; bleachable fancy tallow, tank truck or carlots 8¢ lb.; yellow grease 7¼¢ lb.

Louisville: Demand good; trend firm; supply normal; bleachable white 7¾¢ lb.; white tallow 8¼¢ lb.; yellow grease 6¾¢ lb.

St. Paul: Supply and demand in balance; steady trading at 7¾¢ lb. bleachable fancy tallow, f.o.b. producer's plant.

BARLEY FEED

Portland: Demand good; supply ample; trend unchanged; rolled $63; ground $61.

Ogden: Supply average; rolled $48@53; whole barley $40@45.

Philadelphia: Demand slow; supply fair; pulverized $46.

New Orleans: Demand slow; supply light; trend unchanged; $60@61.

Los Angeles: Demand fair; trend steady; supply adequate; standard rolled $3.28 cwt., sacked; standard ground $3.28 cwt., sacked.

Milwaukee: Demand good; supply fair; needles $1.05@1.15; ground screenings $25.

Baltimore: Demand quiet; supply adequate; $45.50.

Chicago: Demand quiet; supply adequate; $35.

Seattle: Demand good; trend firm; supply fair; $52, bulk, truck lots.

San Francisco: Demand fair; supply ample; rolled $60, ground $59.

Boston: Demand steady; supply adequate; $45.

BENTONITE (SODIUM)

Denver: Demand fair; trend good; supply ample; $25.

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots: 80 granular $31.50; 200 mesh fine $31.

Chicago: Demand steady; supply adequate; f.o.b. Wyoming and South Dakota shipping points; granular 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50, f.o.b. Belle Fourche, S.D., minimum 30-ton carlots; 80 granular $13.50 net; 200 mesh fine $13.25 net.

BLOOD FLOUR

Louisville: Demand fair; trend firm; supply normal; $90@95.

BLOOD MEAL

New Orleans: Demand fair; trend unchanged; supply light; $115@120.

Portland: Demand slow; supply ample; trend unchanged; $105.

Ogden: Supply average; $100 in 100-lb. bags, f.o.b. Ogden.

San Francisco: Demand good; supply tight; $7 a unit of ammonia.

Los Angeles: Demand fair; trend steady; supply adequate; $7.50 a unit of ammonia.

Chicago: Demand and supply fair; $125@132.50, guaranteed 80% protein.

Louisville: Demand good; trend steady; supply ample; $90@95.

BONE MEAL (STEAMED)

New Orleans: Demand slow; supply normal; trend steady; $85@90.

Ft. Worth: Demand fair; supply light; $85, f.o.b. Ft. Worth, local manufacture.

Portland: Demand slow; supply ample; trend unchanged; $95.

Seattle: Demand and trend steady; supply good; $85, ex-dock, truck lots.

San Francisco: Demand good; supply ample; $75.

Los Angeles: Demand fair; trend unchanged; supply adequate; imported $73.50, in 20-ton lots.

Cincinnati: Demand good; trend strong; supply fair; $95.

Denver: Demand good; trend steady; supply very tight; $75, f.o.b. Bay Shore, Cal.

Chicago: Demand and supply fair; $80@90.

Louisville: Demand slow; trend steady; supply normal; $85@90.

Boston: Demand and supply steady; $90.

Buffalo: Demand good; trend steady; supply ample; $90.

BREWERS DRIED GRAINS

Philadelphia: Demand slow; supply fair; $60.50.

Ft. Worth: Demand slow; supply moderate; $56.90, December.

New Orleans: Demand good; supply ample; trend steady; $53.50@54.50.

San Francisco: Demand fair; supply ample; $54.

St. Louis: Demand fair; trend higher; supply ample; $49.

Cincinnati: Demand fair; trend steady; supply fair; $56.

Milwaukee: Demand good; supply fair; $50.

Chicago: Demand fair; supply tight; 26% $49.50@51.

Los Angeles: Demand steady; trend firmer; supply adequate; $49.50 bulk, $53.50 sacked.

Buffalo: Demand and supply fair; trend steady to higher; $52.50, bulk, Boston.

Louisville: Demand fair; trend steady; supply normal; $50.

Boston: Demand good; supply short; 26% $59@60.50; 22% $57.

BREWERS DRIED YEAST

Portland: Demand good; supply ample; trend unchanged; 8½¢ lb.

San Francisco: Demand fair; supply good; 10¢ lb.

Seattle: Demand slow; trend steady; supply ample; $12 cwt.

Chicago: Demand good; supply limited; 10@11½¢ lb. in carlots; 10¼@12½¢ lb. l.c.l.

Los Angeles: Demand and trend steady; supply adequate; 10¢ lb. in 5-ton lots; 11¢ lb. in 1-ton lots; 12¢ lb. in less than 1-ton lots.

Omaha: 10½¢ lb.

Denver: Demand light; trend steady; supply ample; 9¢ lb., f.o.b. Golden, Colo.

Buffalo: Demand good; trend steady; supply ample; $10.25 cwt.

Boston: Demand and supply steady; 10¢ lb.

Louisville: Demand slow; trend steady; supply good; 10@10¼¢ lb.

St. Louis: Demand good; supply limited; 10¢ lb. in carlots; 11¢ lb. in ton lots; 12¢ lb. in less than ton lots.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

Milwaukee: Demand good; supply limited; 10½@11½¢ lb. in carlots; 10¾@12½¢ lb., l.c.l.

BUTTERMILK-CONDENSED

Ogden: Supply normal; $4.40, 100-lb. drum.

Wichita: Demand good; supply insufficient; $2.90 cwt. in barrels.

Philadelphia: Demand dull; supply light; $4.25 cwt.

New Orleans: Demand slow; supply normal; trend steady; $4.25@4.30 cwt.

Los Angeles: Demand and trend steady; supply adequate; 5½¢ lb. in 100-lb. lots; 4½¢ lb. in 500-lb. lots.

Chicago: Demand light; supply adequate; $3.25 cwt. in carlots.

Louisville: Demand slow; trend steady; supply normal; $4.25 cwt.

San Francisco: Demand fair; supply good; $5 cwt.

Boston: Demand slow; supply light; 3½¢ lb.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $15.28, flour $10.28.
Buffalo: Crystals $16.11, flour $11.11.
Toledo: Crystals $17.96, flour $12.96.
Boston: Crystals $16.53, flour $11.63.
Limecrest, N.J.: Crystals $10.50, flour $5.50.

CALCIUM CARBONATE

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, truck lots.

Cincinnati: Demand fair; trend steady; supply adequate; $8@9 cwt.

Los Angeles: Demand and trend steady; supply ample; $10.25.

Chicago: Demand steady; supply adequate; fine grind, plain $9.54, 100-lb. bags; bulk, in hopper cars, fine grind $7.54; bulk in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50-lb. bag $12.25, 100-lb. bag $11.50; bulk, boxcar $10; bulk, hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

CHARCOAL

San Francisco: Demand steady; supply ample; $141.

Los Angeles: Demand slow; trend unchanged; supply ample; hardwood poultry $156 in less than ton lots; $144.40 in ton lots.

Chicago: Demand quiet; supply adequate; poultry charcoal $110 ton in 50-lb. multiwalls.

Boston: Demand and supply light; $100.

COCONUT OIL MEAL

Seattle: Demand fair; trend firm; supply ample; $76, ex-dock, Seattle (Philippine production.)

San Francisco: Demand good; supply tight; solvent $86; expeller $87.

Los Angeles: Demand fair; trend very firm; supply very limited; $84@87, bulk.

COD LIVER OIL (FORTIFIED)

New York: Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@15½¢, 1,500 A 18½@20¢, 2,250 A 18½@21¢, 3,000 A 21½@23¢; 600 ICU, 1,500 A 17½@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

Boston: Demand fair; supply good; 600 D, 2,250 A 19¢ lb.; 300 D, 3,000 A 20½¢; 300 D, 2,250 A 18½¢; 600 D, 1,500 A 18¢; 300 D, 1,500 A 17¢

CONDENSED FISH SOLUBLES

New Orleans: Demand light; supply limited; trend steady; 50% solids $90@93, f.o.b. Gulf.

Denver: Demand fair; trend steady; supply good; dried $187.40, f.o.b. Denver.

Los Angeles: Demand steady; trend firm; supply adequate; 5¢ lb.

New York: Demand and supply fair; trend steady; 4½¢ lb., f.o.b. eastern shore.

Boston: Demand active; supply scarce; 5¢ lb., nominal.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $51.80, meal $83.80.
Atlanta: Feed $57.98, meal $89.98.
Birmingham: Feed $56.64, meal $88.64.
Boston: Feed $56.84, meal $88.84.
Chicago: Feed $45, meal $77.
Cleveland: Feed $53.14, meal $85.14.
Denver: Feed $55.51, meal $87.51.
Ft. Worth: Feed $53.96, meal $85.96.
Indianapolis: Feed $53.36, meal $82.36.
Kansas City: Feed $45, meal $77.
Louisville: Feed $52.21, meal $84.21.
New Orleans: Feed $55.20, meal $87.20.
New York: Feed $56.43, meal $88.43.
Norfolk: Feed $55.71, meal $87.71.
Philadelphia: Feed $56.02, meal $88.02.
Pittsburgh: Feed $53.96, meal $85.96.
St. Louis: Feed $45, meal $77.

CORN OIL MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $49.

Louisville: Demand slow; trend firm; supply ample; $52.45.

COTTONSEED OIL MEAL

Wichita: Demand fair; supply ample; 41% old process $65.

Philadelphia: Demand dull; trend unsettled; supply light; $80.

New Orleans: Demand light; supply adequate; trend steady; $67@68.50.

Ft. Worth: Demand excellent for meal, slow for hulls; limited offerings on old process, sufficient on solvent; carlots, 41% old process $62, prompt; solvent $61.80, January, basis old freight rate; pellets $2 additional; cottonseed hulls $18.

Portland: Demand good; trend higher; supply ample; $65.

Ogden: Supply average; 41% $63@68.

San Francisco: Demand good; supply fair; expeller $64.70; solvent $66.20.

Seattle: Demand good; trend firm; supply fair; $72, truck lots, 41% expeller process.

Omaha: Demand good; supply tight; 41% solvent $65.20, bulk.

Denver: Demand good; trend strong; supply poor; $66, nominal, December, supply sold out.

Kansas City: Demand good; trend steady; supply tight, with no solvent meal available from Texas suppliers until after first of year; solvent meal $62@62.50, Memphis; old process meal $63.50@64, Memphis, and $71, delivered, carlot, Kansas City.

Los Angeles: Demand improved; trend very firm; supply tight; expeller $60 bulk, solvent $65.10 bulk.

Chicago: Demand fair; none offered; hydraulic $63.50; solvent, nominally $62@62.50, basis Memphis.

Cincinnati: Demand fair; trend steady; supply adequate; $70.

St. Louis: Demand good; trend steady; supply adequate; solvent $68.

Louisville: Demand fair to good; trend easy; supply normal; old process $68.50, off 50¢; new process $67.50, off 50¢.

Boston: Demand fair; supply adequate; $80.

Buffalo: Demand and supply fair; trend steady; $81, Boston.

Atlanta: Demand fair; trend steady; supply limited; 41% $67, immediate.

CURACAO PHOSPHATE

New York: Trend steady; ground Curacao phosphate in 100-lb. bags $48, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

D ACTIVATED ANIMAL STEROL, POWDERED

Kansas City: Demand fair; trend steady; supply adequate; 1,500 ICU 9%@10¢ lb.; 3,000 ICU 11½@12¢ lb. in ton lots or larger.

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 18¢ lb., warehouse.

New York: Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

D ACTIVATED PLANT STEROL, POWDERED

Chicago: Demand good; supply adequate; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots; less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $69.12 net ton, f.o.b. Wales in 100-lb. multiwall bags, $3 less in bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $71.50, net ton, f.o.b. Houston, 100-lb. multiwall paper bags; $68.50 in bulk.

Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17%, carload $60, truckload $60.75, net ton, f.o.b. Coronet in 100-lb. multiwall bags, $57 and $57.75 in bulk.

Cincinnati: 18% phosphorus $81; 13% phosphorus $64.98.

DICALCIUM PHOSPHATE

Texas City, Texas: 18.5% minimum phosphorus, 21% minimum calcium, 24% maximum, granular $77.70 net ton, f.o.b. Texas City in 100-lb. multiwall bags; bulk, boxcars and hoppers, $3 net ton less than bagged material.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $83.25, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Chicago: Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more $94.50, basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

Bonnie, Fla.: Minimum phosphorus 18½%, granular $83.25; freight equalized with closest producing point, carload basis.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $94.10, delivered; $3 less in bulk.

Trenton, Mich.: Minimum phosphorus 18½%, maximum fluorine .03% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwalls; minimum phosphorus 21%, maximum fluorine .03% guaranteed $94.50, f.o.b. Trenton in 100-lb. multiwall bags.

Cincinnati: 18½% phosphorus $92@93.

Denver: Demand good; trend firm; supply ample; $96.

Portland: Demand slow; supply ample; trend unchanged; $115.

DISTILLERS DRIED GRAINS

Philadelphia: Demand slow; trend unsettled; supply light; $62.50.

San Francisco: Demand fair; supply ample; solubles $85.

Seattle: Demand good; trend firm; supply limited; $67, delivered, truck lots.

Cincinnati: Demand poor; trend steady; supply adequate; $52.

Louisville: Demand good; trend steady; supply light; bourbon grains: light $50, dark $52, solubles $77.

Boston: Demand fair; supply short; light $59, dark $61.

Buffalo: Demand good; trend steady; supply fair; $57, bulk, Boston.

DRIED BEET PULP

Portland: Demand slow; supply ample; trend unchanged; $50.

Ogden: Supply normal; $40@44.

New Orleans: Demand fair; trend unchanged; supply ample; $63@64.

Ft. Worth: Demand fair; supply sufficient; carlots, 50-lb. papers, December, plain or molasses $53.33, delivered Ft. Worth.
Los Angeles: Demand good; trend steady; supply adequate; molasses $46.90@47.70, bulk.
Seattle: Demand slow; trend firm; supply good; $47, delivered, carlots.
San Francisco: Demand good; supply fair; $42.40.
Milwaukee: Demand good; supply fair; plain $50; molasses $50.
Buffalo: Demand and supply fair; trend steady; $56, Boston.
Boston: Demand fair; supply ample; $56.
Atlanta: Demand slow; trend weak; supply ample; $62.25, immediate.

DRIED BUTTERMILK

New Orleans: Demand slow; supply ample; trend steady; $11@11.50 cwt.
Ogden: Supply average; $7.25, 100-lb. bag.
Los Angeles: Demand and trend steady; supply adequate; 11¾¢ lb.
San Francisco: Demand fair; supply ample; 11¢ lb.
Milwaukee: Demand and supply fair; $10 cwt.
Chicago: Demand fair; none available; medium acid $11@11.25; sweet cream, nominally $11.50@11.75 cwt. in carlots.
Louisville: Demand fair; trend steady; supply normal; 11¼@12¢ lb.
Boston: Demand and supply nil; withdrawn.
Buffalo: Demand good; trend steady; supply limited; $11.35 cwt.

DRIED CITRUS PULP

New Orleans: Demand fair; trend steady; supply ample; $53.50@57.50, f.o.b. Florida.
San Francisco: Demand and supply fair; meal $54.
Los Angeles: Demand and trend steady; supply limited; orange pulp $41 bulk, lemon pulp $39 bulk.
Boston: Demand slow; supply fair; $61.50.
Buffalo: Demand fair; supply poor; too scarce to quote.
Atlanta: Demand fair; trend weak; supply ample; $49, immediate; meal $39.

DRIED SKIM MILK

Portland: Demand good; supply ample; trend unchanged; 12¢ lb.
Philadelphia: Demand slow; supply light; $12.50 cwt.
New Orleans: Demand slow; supply ample; trend steady; $11.50@12 cwt.
Ogden: Supply normal; $15.15, 100-lb. drum.
Cincinnati: Demand fair; trend steady; supply adequate; 10½@10¾¢ lb.
Minneapolis: Strong demand for tight supplies; price unchanged at $10.75@11 cwt.
San Francisco: Demand and supply fair; 13½¢ lb.
Los Angeles: Demand and trend steady; supply adequate; 14¢ lb. in less than ton lots; 13¾¢ lb. in ton lots.
Milwaukee: Demand and supply fair; $11 cwt.
Chicago: Demand good; supply light; $10.50@10.75 cwt. in carlots.
Buffalo: Demand fair; trend steady; supply ample; spray $10.60 cwt.; roller $11.50 cwt.
Louisville: Demand fair; trend steady; supply ample; 11¼@12¢ lb.
Boston: Demand good; supply short; 12¢ lb. in ton lots.

DRIED WHEY

Philadelphia: Demand slow; supply light; $6.25 cwt.
New Orleans: Demand good; supply adequate; trend steady; $6@6.50 cwt.
Ft. Worth: Demand fair; supply adequate; carlots, standard $6, December; $6.25, December, ton lots, f.o.b. warehouse, Ft. Worth.
Portland: Demand good; supply ample; trend unchanged; $7 cwt.
Ogden: Supply average; $6.90, 100-lb. bag.
Kansas City: Demand fair; trend steady; supply lighter; $5.50 cwt. producers' plants for regular or partially delactosed.
Seattle: Demand steady; trend firm; supply good; $6.40 cwt., ex-warehouse, l.c.l.
San Francisco: Demand steady; supply good; $5.50 cwt.
Cincinnati: Demand fair; trend steady; supply adequate; $6.15 cwt.
Los Angeles: Demand steady; trend unchanged; supply adequate; $6.16 cwt. in carloads; $6.40 cwt. in l.c.l.
Chicago: Demand fair; supply adequate; $5.50, f.o.b. plant.
Louisville: Demand fair; trend steady; supply ample; 6¼@6¾¢ lb.
Boston: Demand steady; supply plentiful; 5½¢ lb., f.o.b. plant.

FEATHER MEAL (HYDROLYZED)

Ft. Worth: Demand good; supply moderate; $5 to 87% protein $83.50, f.o.b. trucks, north Texas plants.
Los Angeles: Demand and trend steady; supply increasing; $1.25 a unit of protein.
Boston: Demand steady; supply tight; $85, f.o.b. shipping points.
Atlanta: Demand fair; trend steady; supply ample; $94, immediate, f.o.b. Alabama and Georgia producing points.

FISH MEAL

Portland: Demand fair; supply ample; trend unchanged; $2.25 a unit, f.o.b. Vancouver.
Ogden: Supply normal; $2.20 a unit, f.o.b. Coast; 65% $151@153.
Ft. Worth: Demand good; supply limited; 65% Peruvian $162, first half December arrival, f.o.b. Houston.
New Orleans: Demand light; supply limited; trend steady; menhaden 60% $143@145; scrap $134@135, f.o.b. Gulf.
Cincinnati: Demand fair; trend steady; supply adequate; $164.
Minneapolis: Light demand; fair supply of 60% meal, but scarcity of 70% herring; price unchanged; 60% $168@173, truck lots; 70% herring $2.30 a unit, nominal, West Coast.
San Francisco: Demand good; supply fair; $2.30 a unit of protein.
Seattle: Demand fair; trend easy; supply good; $2.33 a unit protein, truck lots (Canadian production).
Los Angeles: Demand good; trend firm; light offerings; local production, 60% protein $2.30@2.35 a unit.
Denver: Demand good; trend strong; supply scarce; $2.25 a unit of protein, f.o.b. West Coast.
Milwaukee: Demand good; supply fair; 60% $159.
Chicago: Demand good; supply very tight; eastern menhaden fish meal, 60% protein $154@160; Gulf, no offerings; Northwest herring-salmon blend, no offerings; Canadian herring, 73% protein $2.20@2.30 a unit of protein subject to production.
Louisville: Demand slow; none available; last quarter $170@175.
Boston: Demand active; supply allocated; $140, nominal.
Buffalo: Demand good; trend stronger; supply very scarce; 60% protein menhaden $180, bulk, nominal; $185, sacked, nominal.
Atlanta: Demand fair; trend strong; supply limited; 60% $170, nominal.

HAY

Wichita: Demand poor; supply ample; prairie $8@10, alfalfa $10@12.
Philadelphia: Demand slow; supply light; $32@35.
Ft. Worth: Demand fair for alfalfa, practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $36@38, No. 2 $24@36; prairie No. 2 $26@28; No. 2 Johnson grass $24@26, delivered Texas common points.
Portland: Demand good; trend firm; supply limited; $30@32.
Ogden: Supply normal; $1 bale; $18 in the barn.
Cincinnati: Demand fair; trend steady; supply adequate; No. 1 timothy $24; No. 1 second cutting green alfalfa $37; mixed $27; wheat or oat straw $19.
Los Angeles: Demand very slow except for top grades; U.S. No. 1 $32@34; U.S. No. 2 leafy $29@31; U.S. No. 2 green $27@29; U.S. No. 2 $24@26.
Seattle: Demand fair; trend firm; supply good; alfalfa $32 delivered truck lots, U.S. No. 2 green.
Denver: Demand poor; trend slow; supply ample; alfalfa, baled $25, first and second cutting.
Boston: Demand and supply steady; No. 2 timothy $40@42.

HOMINY FEED

New Orleans: Demand light; supply adequate; trend steady; $47.50@49.
Seattle: Demand fair; trend firmer; supply good; $51, carlots.
Kansas City: Demand slow; trend steady; supply ample; yellow $37@37.50, bulk, $3.50 more for sacks, $1 less for white.
Cincinnati: Demand fair; trend steady; supply adequate; $45.
St. Louis: Demand slow; trend steady; supply limited; yellow $45.
Milwaukee: Demand good; supply fair; $43.
Chicago: Demand good; supply tight; $45.50@46.
Louisville: Demand fair; trend strong; supply ample; $48, up $3.
Boston: Demand good; supply steady; $55.50.
Buffalo: Demand and supply fair; trend steady; $51.50, bulk, Boston.

LINSEED OIL MEAL

Wichita: Demand slow; supply ample; 34% $74.50.
Philadelphia: Demand and supply fair; trend unsettled; 32% $84.50.
New Orleans: Demand good; supply ample; trend strong; $69.50@70.
Ft. Worth: Demand good; offerings extremely light for December; carlots, 34% solvent, December $86, basis present freight rate; truck $81; pellets $2.50 premium.
Portland: Demand good; supply ample; trend unchanged; $77.
Louisville: Demand fair; trend strong; supply ample; old process $83.40, up $3; new process $79.90, up $3.50.
Boston: Demand good; supply spotty; $81.
Kansas City: Demand strong; trend steady on solvent, strong on old process; little available because of lack of production; solvent meal $61.50@62, bulk, Minneapolis; old process $66.
Minneapolis: No mill offerings; some jobber and resale but supply very thin; price slightly weaker for solvent; solvent $61.50, bulk, December; expeller $67.50, bulk, December.
San Francisco: Demand fair; supply ample; $72.50.
Seattle: Demand fair; trend firm; supply limited; $86, carloads, 34% protein.
Cincinnati: Demand poor; trend steady; supply adequate; new process $74; old process $81.50.
Los Angeles: Demand slow; trend firm; no offerings; local production, 29% protein, nominal $64@65.
Omaha: Demand good; supply tight; 34% solvent $68.80, bulk; 32% old process $70.80, Omaha basis.
Denver: Demand fair; trend steady; supply tight; $79.50, nominal.
Milwaukee: Demand good; supply fair; old process $74.50; new process $72, both nominal.
Chicago: Demand good; supply scarce; solvent $66; expeller $68, basis Minneapolis.

MALT SPROUTS

New Orleans: Demand fair; trend steady; supply limited; $44.50@46.
Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $48.
Milwaukee: Demand good; supply fair; odd weights $42; even weights $43.
Chicago: Demand fair; supply adequate; No. 1 $45.
Boston: Demand and supply limited; $42.50.

MEAT AND BONE MEAL

Ft. Worth: Demand good; trend stronger; supply sufficient; meat and bone, 50% $88@90, f.o.b. or delivered Ft. Worth.
New Orleans: Demand slow; trend weaker; supply adequate; $102@104.50.
Portland: Demand slow; trend lower; supply ample; $1.45 a unit.
Ogden: Supply average; $87.50, in 100-lb. bags.
Wichita: Demand heavy; supply insufficient, 50% $95, f.o.b. plant; 55%, no quotations, no offerings.
Boston: Demand good; supply adequate; $1.43 a protein unit; converted 50% $82.50.
Louisville: Demand fair; trend steady; supply good; $90@95.
Buffalo: Demand good; trend stronger; supply fair; 50% meat scraps $95 bulk, $100 sacked.
St. Paul: Demand good; supply adequate to meet it; 50% digester $98@102.
San Francisco: Demand good; supply ample; $1.70 a unit of protein.
Seattle: Demand and supply good; trend steady; $80, ex-warehouse, 50% protein.
Los Angeles: Demand improved; trend unchanged; supply adequate; 50% protein $1.80 a unit.
St. Louis: Demand good; trend steady; supply limited; $97.
Kansas City: Demand good; trend steady; supply tight, although more plentiful than tankage because of greater production; 50% meat and bone scraps $92.50@95.
Omaha: $95.
New York: Demand poor; trend steady; supply tight; 50% $82.50, 55% $90, bulk; 50% $85.50, 55% $93, sacked.
Denver: Demand good; trend firm; supply ample; 50% $87.50 in ton lots; $85 in truck lots.
Cincinnati: Demand good; trend strong; supply fair; 50% meat and bone scraps $92.50.
Chicago: Demand fair; supply adequate; 50% protein $87.50@97.50.

MILLFEED

Minneapolis: Continued strong demand for tight supplies; some mills reported sold out through December; spot prices up about $1; bran $42, standard midds. $44@44.50, red dog $45@46.50.
Kansas City: Demand excellent; trend strong; supply tight for all types of feed, especially for bulk middlings; bran $38.75@39.50, shorts $40.75@41.50, sacked; bran $36.50@37.25, shorts $40.50@41.25, middlings $39.25@40, bulk.
Wichita: Demand strong; supply adequate; basis Kansas City: bran $38.25@38.75, shorts $41.25@41.75; bran advanced $2 and shorts $1, compared with the preceding week.
Omaha: Demand good; supply tight; sacked bran $40; sacked gray shorts $45; bulk standard midds. $42, all Omaha basis.
Ft. Worth: Demand good; light offerings; carlots, burlaps, prompt, bran $49, gray shorts $50.50; bulk middlings $48, delivered Texas common points; $4 higher on bran, $1.50 higher on shorts, unchanged on middlings, compared with previous week.
Chicago: Millfeeds are stronger and demand is good. Demand from the East is good, observers say, cutting into available supplies from this area. There is some feeling that government buying of flour might ease the supply situation for millfeeds soon. Quotations: bran $46@47, standard midds. $49@49.50, flour midds. $49@49.50, red dog $49.50@50.
Cincinnati: Demand fair; trend higher; supply adequate; bran $53, middlings $55.
St. Louis: Demand good; trend steady; supply limited; bran $44.25@44.75, shorts $46.25@46.75, sacked; bran $42@42.50, shorts

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Kansas City, St. Louis, Chicago, Buffalo, Omaha, Toledo, Columbus, Fort Worth, Portland, Boston, Galveston, Enid, Minneapolis, Norfolk, San Francisco, Nashville, Louisville, Memphis, Houston

$46@46.50, middlings $44.50@45, bulk.

Boston: Demand active; supply spotty; bran $56, middlings $57.

Buffalo: Activity in millfeeds subsided last week but there was still enough demand to maintain the advanced price levels of the previous period and keep shipping positions tight. Bran, middlings and red dog ended the week unchanged. Quotations Nov. 25: bran $52@52.50, standard midds. $52.50@54, red dog $53@56; the bulk differential on both bran and middlings was $5.

Philadelphia: Demand slow; supply light; trend unsettled; bran $59, standard midds. $60, red dog $63.

New York: Demand fair; trend downward; supply good; bran $59@59.50, standard midds. $60@60.50.

New Orleans: Demand fair; trend steady; supply adequate; bran $48@48.75, shorts $52@52.75.

Louisville: Demand good; trend strong; supply normal; bran $49.60, up $2; mixed feed $51.60, up $1.50; shorts $54.50, up $2; middlings $55.30, up $1.50.

Denver: Demand good; trend strong; supply ample; shorts $41.75, bran $39.25, mill run $40.50.

Seattle: Demand and supply fair; trend firm; $39, common transit points, carlots.

Portland: Demand good; trend firm; supply limited; $38.

Ogden: Supply average; to Utah and Idaho: red bran and mill run $39, middlings $44; to Denver: red bran and mill run $46, middlings $51; to California: red bran and mill run $46.50, middlings $51.50, f.o.b. San Francisco and Los Angeles.

Los Angeles: Standard mill run $45, bulk, demand fairly good, steady trend, ample supplies; red bran $52@54, slow demand, firmer trend, ample supplies.

San Francisco: Demand fair; supply ample; millfeed $46, red bran $51.

MINERAL FEED

Ft. Worth: Demand fair; supply ample; all-purpose granules $89, block $94; mineral phosphorus 6% granules $105, block $110; cattle-sheep mineral 7% phosphorus granules $99, block $103; hog mineral phosphorus 3½% granules $38, phosphorus 2% $78 (all in 50-lb. paper bags).

Portland: Demand slow; supply ample; trend unchanged; $48.

Wichita: Demand good; supply insufficient; all-purpose with iodine, 50-lb. blocks $95, 100-lb. bags $90, f.o.b. plant.

Ogden: Supply normal; $113 in 50-lb. blocks; $103, granular, 50-lb. bags.

Denver: Demand fair; trend steady; supply ample; $155.

San Francisco: Demand steady; supply good; all-purpose with iodine $70.

Seattle: Demand fair; trend steady; supply good; mixer mineral $48, ex-warehouse; all-purpose mineral $85, ex-warehouse.

Sioux City: 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

MOLASSES

Ft. Worth: Demand good; supply sufficient; blackstrap 13⅜¢ gal., f.o.b. Houston; delivered Ft. Worth, truck $30.78, seller's market price on date of shipment.

Cincinnati: Demand fair; trend steady; supply adequate; 13¼¢ gal., New Orleans.

Los Angeles: Demand good; trend easier; supply adequate; $23, bulk, f.o.b. tank cars; $23.25, bulk, f.o.b. tank trucks.

Kansas City: Demand slow; trend steady; supply adequate; 12¾¢ gal., tank car, New Orleans.

St. Louis: Demand fair; trend steady; supply ample; 12¾¢ gal., New Orleans.

Denver: Demand fair; trend weak; supply ample; 12¾¢ gal., New Orleans.

New York: Demand and supply good; trend steady; blackstrap 17¢ gal., tank cars, tank wagons, f.o.b. New York.

Minneapolis: Poor demand for time of the year, apparently because of too much open weather; price weaker at 12½¢ gal., New Orleans.

San Francisco: Demand and supply good; $24, f.o.b. cars, Richmond, Cal.

Seattle: Demand fair; trend easy; supply good; $23, f.o.b. Seattle, tank car lots or truck lots.

Boston: Demand good; supply plentiful; 17½¢ gal. in tank cars.

Louisville: Demand fair; trend easy; supply normal; 12¾¢ gal., tank car lots, f.o.b. Gulf ports; down ¼¢ gal.

Buffalo: Demand fair; trend steady; supply good; 17½¢ gal., f.o.b. Albany.

Atlanta: Demand fair; trend steady; supply limited; citrus $22.50, bulk, f.o.b. Florida producing points, immediate.

NIACIN

New York: Trend steady; $8 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Cincinnati: Demand fair; trend steady; supply adequate; reground oats $20.50; pulverized white oats $49; rolled oats $83@86.

Philadelphia: Demand slow; supply fair; pulverized white $52.50; Canadian oat feed $34.50; domestic $24.

Ft. Worth: Demand slow; supply sufficient; oat millfeed $43.45; reground oat millfeed 3% protein, sacked $24.95.

Portland: Demand good; supply ample; trend unchanged; rolled $62; ground $59; cleaned $61.

Chicago: Demand fair; supply scarce; reground oat feed, nominally $17.50; fine ground feeding oatmeal $70@72; feeding rolled oats $80@82.

Los Angeles: Demand fair; trend steady; supply adequate; pulverized, local production $62.

Minneapolis: Fair demand; ample supplies; prices unchanged; feeding rolled oats $78; feeding oatmeal $69; pulverized $44.50; crimped $53; reground $17.

Seattle: Demand and supply fair; trend firmer; $50 bulk, truck lots.

Louisville: Demand fair; trend steady; supply normal; reground $23.60, rolled $84.30, feeding $78.30, pulverized $50.80, crimped $65.80.

Boston: Demand steady; supply spotty; white pulverized $55; reground oat feed $19.

OYSTER SHELL

New Orleans: Demand good; supply plentiful; trend steady; $17@17.50.

Portland: Demand slow; supply ample; trend unchanged; western $34, eastern $38.50, granite grits $26, shell flour $24.

Cincinnati: Demand fair; trend steady; supply adequate; $23.45.

Los Angeles: Demand steady; trend unchanged; supply ample; $14.80.

Boston: Demand and supply steady; $25 in paper.

Louisville: Demand good; trend steady; supply ample; in 80-lb. paper $22.85; in 50-lb. paper $23.10; in 25-lb. paper $25.35.

San Francisco: Demand fair; supply ample; local $15, eastern $26.

Seattle: Demand and trend steady; supply good; eastern $35, carlots.

PEANUT OIL MEAL

Milwaukee: Demand and supply fair; 26% $42.

Atlanta: Demand fair; trend steady; supply ample; 45% $65, immediate.

PEAT MOSS

Philadelphia: Demand slow; supply nil; $2.85, f.o.b. pier, nominal.

Portland: Demand slow; supply ample; trend unchanged; $3.25 bale.

New York: Demand and supply good; trend steady; Canadian, 7 cu. ft. bale, veneer wrapped $3.32, f.o.b.; German 7½ cu. ft. bale $2.82, at dock, New York.

Los Angeles: Demand slow; trend easier; supply ample; Canadian, 6.1 cu. ft. bales $3.75.

Chicago: Demand fair; supply short; $3.60@3.70, standard 7½ cu. ft. bale.

San Francisco: Demand fair; supply ample; $3.75 bale.

Seattle: Demand poor; trend easy; supply good; $2.70 bale, truck lots.

Boston: Demand and supply steady; $3.15 bale in carlots.

POTASSIUM IODIDE, U.S.P.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures, 250-lb. drums $1.35; 200 lb. in 100-lb. drums $1.35; 100-lb. drum $1.38; 25-lb. drums $1.41.

Chittenango, N.Y.: Demand good; supply adequate; 90% KI stabilized with calcium stearate, 200 lb. in 100-lb. cartons $1.35; 100-lb. cartons $1.36; freight prepaid to destination.

Atlanta: Demand fair; trend steady; supply ample; $99.50, immediate, f.o.b. Alabama and Georgia producing points.

Boston: Demand good; supply tight; $100.

POULTRY BY-PRODUCTS

Ft. Worth: Demand good; supply moderate; 55% protein $95, f.o.b. north Texas plants.

Los Angeles: Demand slow; trend unchanged; supply ample; $1.60 a unit of protein.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gram in less than ton lots, in 3.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more; freight prepaid or paid to destination.

New York: Trend steady; feed grade (in feed supplements) 4⅛¢ gm. in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Ft. Worth: Demand good for export, slow for domestic at present price; none offered; carlots, rice bran $37@38, nominal, f.o.b. south Texas rice mills; hulls $2, f.o.b. mills.

Los Angeles: Demand steady; trend firm; supply very scarce; bran, California production, high fat content $49, nominal.

San Francisco: Demand fair; supply ample; bran $40, polished $49.

SCREENINGS

Ft. Worth: Demand almost nil; supply sufficient; ground $28, nominal.

Cincinnati: Demand fair; trend steady; supply adequate; malt house $19.50; barley $22.50@23.50.

Chicago: Demand fair; supply adequate; ground grain screenings $30.50; Canadian $23.50.

Buffalo: Demand good; trend steady to higher; supply fair; ground $32.75, New York, lake and rail; unground, bulk $27, New York.

Minneapolis: Demand heavy; supplies extremely light; slight increase for Canadian screenings; lights $6@15, mediums $16@25, heavies $26@35; Canadian bulk $21; Canadian ground $32; flaxseed screenings $35; oil type flaxseed screenings $43, basis 15%.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Atlanta: $20.40@20.67.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.35.
Kansas City: $24.58@25.
Memphis: $22.20@22.47.
Minneapolis: $25.92@26.06.
Philadelphia: $24.32@24.95.
St. Louis: $24.14@24.27.

SORGHUMS

Los Angeles: Demand and trend easier; supply ample; milo $2.35 cwt., bulk.

Ft. Worth: Demand slow; supply sufficient; carlots, bulk, No. 2 yellow milo $2.19@2.21, delivered Texas common points.

SOYBEAN OIL MEAL

Wichita: Demand good; supply adequate; 44% $68, 50% $76, f.o.b. Wichita.

New Orleans: Demand fair; trend steady; supply adequate; $65@67.

Ft. Worth: Demand good; offerings limited account freight rate change; carlots, 44% $82.50, December, basis old freight rates; truck meal 44% $69.50@70 this week.

Portland: Demand good; trend higher; supply ample; $49, f.o.b. Decatur.

Philadelphia: Demand and supply fair; trend unsettled; 44% $57.

Ogden: Supply average; $81@86.

Kansas City: Demand slow locally but good nationally, some buying hesitation because of forthcoming rail rate reductions; trend steady; supply adequate; meal for Kansas City and western shipment $54@55, bulk, Decatur; unrestricted meal $59@59.50.

Cincinnati: Demand poor; trend higher; supply adequate; $58, bulk, Decatur.

Los Angeles: Demand steady; trend firmer; supply ample; $79.50, bulk.

St. Louis: Demand fair; trend lower; supply limited; $69.

Omaha: Demand good; supply tight; 44% $61.90, bulk.

Denver: Demand fair; trend strong; supply ample; $73.50.

Milwaukee: Demand good; supply fair; $56, bulk, Decatur.

Minneapolis: Supply and demand good and about in balance; price slightly weaker at $47.50, bulk, Decatur, for Minneapolis shipment of 44%; 50% $55, bulk, Decatur.

Seattle: Demand steady; trend firmer; supply ample; $85, carlots.

San Francisco: Demand fair; supply ample; $83.50.

Chicago: Soybean oil meal went along on an even keel during the week ending Nov. 25. Unusually heavy demand and advancing prices, which have featured the market for the last several weeks, were not apparent. Observers said it appears feed manufacturers have their inventories stabilized, soybean processors have part of their order backlogs whittled down, and a period of more orderly marketing might be at hand. Quotations: 44% protein soybean oil meal, bulk, unrestricted, basis Decatur $57.50@58; eastern restricted $56@56.50; 50% bulk, unrestricted, basis Decatur $62; eastern restricted $61.

Louisville: Demand fair; trend strong; supply normal; $69.20, up $2.20.

Boston: Demand good; supply adequate; 44% $53, January shipment; 50%, nearby $63.

Atlanta: Demand fair; trend steady; supply ample; 44% $67, immediate.

TANKAGE

Louisville: Demand fair; trend steady; supply normal; 60% $95@100.

St. Paul: Demand good; supply adequate; price up $2@5; 60% digester $97@100.

Kansas City: Demand pretty good; trend steady; supply fairly tight, with supplies being cleaned up as they become available; 60% digester $100.

Wichita: Demand heavy; supply insufficient; 60% $97.50, f.o.b. plant.

New Orleans: Demand fair; trend weaker; supply ample; $117@118.

Ft. Worth: Demand fair, supply sufficient; 60% digester $92@94, f.o.b. Ft. Worth.

St. Louis: Demand good; trend steady; supply limited; $97.

Chicago: Demand and supply fair; 60% protein $92.50@102.50.

Cincinnati: Demand good; trend strong; supply ample; 60% digester $97.50.

Omaha: $100.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; supply limited; 7⅝¢ lb., f.o.b. north Texas area.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; any quantity in 100-lb. drums $1.50; in 25-lb. drums $1.55; freight allowed to destination.

Rochester, N.Y.: Demand and supply good; trend steady; 100-lb. drums $1.50 lb., 25-lb. drums $1.55 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

New York: Demand and supply good; trend steady; 100-lb. drums $1.50 lb., 25-lb. drums $1.55 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

WHEAT GERM MEAL

Chicago: Demand and supply fair; price unchanged at $87.50.

New Orleans: Demand and supply fair; trend steady; $105@107.

Buffalo: Demand fair; trend steady; supply fair; commercial grade $75.

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WESTERN

(Continued from page 1)

tonnage tax load, we wish to thank all of you for your assistance in getting this program under way.

"I assure you that neither I nor my administrative staff has closed our mind on any new ideas with regard to our administration of this phase of feed control. Some of you have the idea that we instituted the custom mix report in an effort to discourage such procedures. I assure you that we did not go into it for the purpose of causing a burden on any one."

Mr. Spry said that some rough spots appear to have been smoothed over and that the state has tried to simplify bookkeeping for dealers.

Other resolutions urged effort to remove tax inequalities, pledged cooperation with the Food and Drug Administration on grain sanitation matters and renewed long-range planning activities of the association.

Registration reached a record 920, according to Bob Skinner, executive secretary. This reflects an increase in membership of 69 since a year ago to a present 963 members.

The association also adopted revised articles of incorporation which provide:

- A new name: Western Grain & Feed Association of Iowa.
- More up-to-date objectives and purposes.
- Definition of regular, station and associate members.
- A requirement for "not less than 15 nor more than 20" members on the board of directors, rather than limiting membership to 15.
- A requirement that officers, except the executive secretary and treasurer, be elected from the membership of the board.

Speakers at the convention included the heads of the two national feed associations. Their discussions, like those of other speakers, stressed the necessity for keeping pace with change in agriculture and the feed business.

Panel discussions on maintaining grain quality and operation of grain banks were special features of the program. (Reviews of the panels will appear in a subsequent issue of Feedstuffs.)

Bob Couch, Bates-Couch Grain Co., Des Moines, was elected president of the association, succeeding Curtis Holley, Waterloo (Iowa) Mills Co. George Opperman, Manning (Iowa) Mill, was named vice president; W. A. Trotter, Community Feed Store, Ainsworth, treasurer, and Mr. Skinner, executive secretary.

New board members are Earl Stelflug, Kerber Milling Co., Emmetsburg; Bert Laufer, Challenge Feed, Atlantic; B. C. Swanson, Swanson Elevator, New Sharon, and J. M. Delagardelle, Gilbertsville (Iowa) Milling.

Producing for Market

"Agriculture cannot afford to wait until population growth catches up with the production of food," I. S. Riggs, vice president of Quaker Oats Co. and chairman of the board of the American Feed Manufacturers Assn., said in his discussion of "Mrs. America—and the Feed Industry." (See editorial, page 2.)

"I say agriculture must tackle its problems now, by coming up with better quality, more attractive farm products, more efficiently produced. The farmer can't sell fat pork to a housewife who is cholesterol-conscious, any more than he can persuade her to feed more potatoes to a husband whose waistline is beginning to look like the equator.

"Agriculture must become more responsive to the nutritional demands of the modern homemaker."

"The feed business can't continue to be healthy unless agriculture itself remains healthy. I think we ought to be very thoughtful about the changes which are taking place on the farm today," he said.

While national income has advanced 7% a year recently, farm income has been down about 2½% per year, the speaker said. Food output has been increasing faster than it can be absorbed, in spite of population growth and higher national income.

"What is the solution to our current dilemma?" he asked. "My guess is that the answer lies in producing for a market, rather than simply to market. For example, I would junk the concept of raising hogs to get rid of corn. Instead, I would work to improve the quality of my pork. I would say, let's take care of our farm eggs, move more of them through grocery stores where modern methods of moving mass quantities of universally accepted foods can be exploited."

Farmers in the future, he predicted, will produce more and more according to specifications because they will want to seek preferred markets which will bring them more profit on their investments.

Not Cuss Words

"Neither the farmer, nor the processor, nor the consumer ought to be afraid of terms such as 'producing to specifications,' 'vertical integration' and 'contract farming.'

"You can't produce agricultural commodities to specifications without

some sort of coordinated production and marketing agreement, and such arrangements ought not to be regarded as cuss words. The question, it seems to me, is just what sort of arrangements can best do the job? Mrs. America isn't concerned with those arrangements—only with the food she gets."

Mr. Riggs noted that great changes are occurring everywhere. The packing industry is becoming decentralized, the feed industry is moving to smaller plants with pushbutton efficiency, the trucking industry has completely revolutionized the transportation system and food distribution methods have undergone a great change. "None of us should be afraid of change."

Concerning integration systems, Mr. Riggs said, "There may be good contracts, and there may be bad contracts; some methods of integration may succeed, others fail. Some plans may work for one commodity and fail for another. But whether we call it integration or contract farming or just plain working together for sensible profitable production and distribution of farm commodities, it all leads to this:

"Producing for a market; supplying products of the right quality, in marketable form, at the right time and at the right price. The housewife has said that's what she wants—and the housewife runs your business and my business and the farmer's business."

Mr. Riggs said that "unbelievably larger quantities" of meat, milk and eggs can be sold if quality and price are right. "I think total meat consumption can be raised from the present 165 lb. per capita to 200 lb."

He predicted that the volume of manufactured feed can expand 50% to 80% by 1975 provided that population increased by then to 220 million, per capita income increases 60%, present trends in food consumption habits continue and that price relationships of livestock and grains remain about as they are now.

Needs Bigger Volume

The feed man is confronted with the necessity of doing more volume business on margins no greater than the margins of many years ago, it was noted by Madison Clement, president of the Grain & Feed Dealers National Assn., Waco, Texas.

"The profit that you can add to a sack of feed to the big users cannot, of necessity, be large, and the number of small feeder operators are dwindling," he explained. "It takes a larger volume in the feed business today than it used to, to make a profit over living expenses."

Mr. Clement also discussed credit, saying that the greatest problem with the credit business is that feed men are so anxious for business and need it so badly to run their plants that they do not adhere to the sound principles that it takes to extend credit wisely. He said a customer should offer four "C's" in order to be a good credit risk—"character, capacity, capital (in fixed assets) and collateral."

Collateral Emphasized

Mr. Clement emphasized the need for collateral. "Collateral is something that is difficult to get, perhaps except where you or your dealer receives a mortgage that is assigned to the ultimate one who furnishes the finances for the operation and then, of course, you have the poultry or the animal, including the feed, as your collateral," he explained. "I feel, in many instances, that this is adequate because, after all, when a customer furnished his equipment and labor, certainly he has an investment that is worthwhile."

The speaker talked about bulk feed delivery as another recent change in the feed business. "With the growth of individual farms, and where there is a concentration of larger units, certainly bulk feed delivery will play an ever-increasing part in the feed business. There are many places where bulk delivery does not fit, but as the feeding units become larger, the need for bulk delivery becomes more pronounced," he said.

Mr. Clement made the point that when feed manufacturers make direct deliveries, the dealer can render a useful service by getting out and selling the merchandise just as he would if it came in sacks, and suggested that the dealer might rearrange his overhead so that this would be the economical way for him to handle bulk feed. "In my opinion it is certainly not necessary that every feed dealer have his own bulk delivery, and of course, there will be an inherent saving to the customer by having deliveries made direct," he commented.

Rail Rate Reductions

Emphasizing rapid changes occurring in the feed business, Mr. Clement mentioned that the railroads are talking about putting new rates on soybean meal and cottonseed meal in certain areas that are "very drastic in nature." He said that the railroad people in recent years have simply priced themselves out of business in many instances, but that if they make the rate reductions they are talking about, they would certainly be competitive with trucks and would command a greater share of the business.

In his closing remarks Mr. Clement praised the work of Western Grain & Feed Association of Iowa, and said that this organization and the Grain & Feed Dealers National Assn. are working together to do everything possible to benefit members.

Market Facilities

Operators of country elevators should not forget the value of futures markets in minimizing risks or how futures trading is conducted, Ron Booth, Lamson Bros. & Co., Cedar Rapids, Iowa, told the group.

"If we are to be realistic we must already know that production of grain for storage instead of consumption is economically unsound and eventually there must be a balance between production and consumption," he said. "If this premise is correct, then greater understanding of marketing functions by the grain trade and the public in general is essential and the basic uses of marketing procedures must not be forgotten."

In spite of present surpluses and need for commercial storage of government-owned grain, there could be a time when country elevator operators and merchandisers might need price insurance again, Mr. Booth pointed out. "In case you have come into the business within the decade, be sure to familiarize yourself with this tool so you will be ready to take advantage of it should opportunity present itself."

Mr. Booth related the history of grain trading, including development of the futures market, and he cited examples of how futures transactions can be used advantageously by elevator operators.

The elevator man, after taking title to cash grain, is immediately vulnerable to the risk of price changes while the grain is in his house. He has two alternatives to protect himself: (1) Sell the cash immediately or (2) Sell futures against the cash purchase, thereby hedging his original purchase. If he performs the functions of blending, conditioning and storing after selling futures, he can then seek a buyer for the cash or actual grain purchased. When he sells the cash, he then reverses his original procedure in the futures market by buying.

Mr. Booth pointed out that large-scale speculation has been curbed by regulation as a result of some abuses of excessive trading. More recently, small speculators have been less active because the government loan program has distorted distribution, consumption and production. Reduction of this necessary speculative activity, he said, has reduced the liquidity of the futures market.

Loss of this activity has been partially offset by increased hedging by industry, including the "anticipatory hedge" now permitted, Mr. Booth said, but the market does not function as smoothly without speculative activity in futures trading.

Getting Better

"When I stop getting better, I stop being good," Joseph E. Burger, director of public relations, H. V. Nootbaar & Co., said in introducing his talk on improving sales performance.

Mr. Burger listed the qualifications of the successful salesman under these headings:

Character: Absolute sincerity is the priceless ingredient, and loyalty to one's employer is essential.

Industry: The star salesman loves his work and uses 10% more effort than others. He does things the average salesman doesn't like to do, and he constantly cultivates new prospects.

Ability: A good salesman should "plan his work and work his plan." Also, he should know his product and be able to discuss it clearly.

Courage: A man who can sell without cutting prices has courage. About 70% of all new customers are sold on the second to the fifth call, and only 30% on the first call.

Personality: The star salesman guards his health, keeps friendly, radiates enthusiasm and is a good loser. He uses his eyes, ears and mouth. He listens with his eyes as well as his ears and does not talk excessively. ("Use your big mouth. Keep it shut.") Never forget a customer nor let him forget you.

Mr. Burger advised his listeners to observe the slogan TNT—Today, Not Tomorrow.

Active Program

A review of the Western association's activities during the past year was presented by Curtis Holley, association president and representative of Waterloo (Iowa) Mills Co.

Mr. Holley mentioned two new services added to the list the association offers members—a collection service and a group insurance plan. "It was felt that both of these were sorely needed to round out and further diversify those offered," he said. "I'm not going to go into detail on either of them, but do want you to know that the companies offering these services were thoroughly investigated before we became affiliated with them."

The association president praised members who during the year had served on the faculty of short courses at Iowa State College—courses conducted for assistant managers and managers of elevators, feed plants, feed mills and farm supply stores. He also commended those who helped with the College-Feed Industry Nutrition Conference at Iowa State in September.

State-National Cooperation

Mr. Holley said that the association's success in the tax amortization case illustrated the need for a strong active state group associated with a national association. (This case involved Iowa warehousemen without permanently installed equipment not qualifying for a 60-month tax amortization.) Mr. Holley pointed out that states other than Iowa would have been involved if the problem had not been solved.

The speaker also touched upon the association's progress in promoting membership, proposing changes in the Articles of Incorporation, setting up a planning committee which would be responsible to the board of directors for the purpose of correlating and promoting the long-range objectives of the organization, and in public relations.

OPENS FEED STORE

GUSTINE, CAL.—Charles F. Reutter has formed Reutter's Farm & Feed Store here, to retail feed and related farm products.

MEDICATED

(Continued from page 1)

some drugs seems to have given some feed users the impression that anything less than 100% effectiveness is due either to an inadequate amount of the drug in the feed, or to a possible mixing error on the part of the feed manufacturer. As a result, with increased incidence, the feed manufacturer has found himself in the position of defending some drugs on the basis of their efficacy and/or safety."

Mr. Glennon concluded: "With the advent of medicated feed, drug producers have played an integral part in the development of an animal agriculture in U.S. which is second to none in the world. We are very pleased the drug producers will cooperate in this relations program with the nation's feeders to re-emphasize the proper role drugs play in the over-all production picture."

ADM

(Continued from page 1)

western Missouri. The Raglands at one time operated a group of small flour mills there and later entered the feed milling business.

The Goodman mill will serve Archer dealers and their customers in southwestern Missouri, southeastern Kansas, northwestern Arkansas and northeastern Oklahoma. A fully modern mill with daily capacity of up to 150 tons, it will produce meal, pellets and crumblized feeds in bag and bulk.

"Establishing Archer Feed production in this area recognizes the growing demand for complete poultry and livestock feeding rations and the necessity of bringing the feed production as close as possible to the feedlot," said Mr. Meinhoefer.

CONTEST

(Continued from page 8)

program will be promoted nationally during the spring and fall farrowing seasons on radio, television and in educational farm magazine advertising.

Coordination of Pfizer's educational program with that of feed manufacturers and feed dealers across the country is also planned. Company officials indicated that strip films will be offered through dealers for feeder meetings, giving producers a chance to see how life-cycle feeds can be used for greater profits.

The chemical and drug firm plans to conduct interviews with leading swine specialists to bring out new information about the seven main stages of life-cycle feeding—gestation, lactation, pre-weaning, weaning, growing, finishing, and the stress periods.

M. E. Neely Heads Omaha Exchange

OMAHA—At its annual meeting held Nov. 18 M. E. Neely, Bartlett & Co., was elected president of the Omaha Grain Exchange.

Named as first vice president was R. M. Scoular, Scoular-Bishop Grain Co. H. B. Waller of Butler-Welsh Grain Co. was named second vice president, and Adolf Mayer, Continental Grain Co., was reelected treasurer. Directors elected to serve three years were Messrs. Mayer, Neely and Waller.

Other directors are H. C. Christiansen, Sr., Norris Grain Co.; J. W. Holmquist, Holmquist Elevator Co.; R. E. Miller, Updike Grain Corp., and A. W. Nielsen, Westcentral Cooperative Grain Co.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
September 20	967	513	692	752	180	552	1,371	1,714
September 27	1,009	551	680	682	152	495	1,450	1,789
October 4	1,103	433	767	760	202	567	1,601	1,674
October 11	1,087	499	584	727	159	570	1,576	1,690
October 18	1,110	378	633	713	119	495	1,445	1,643
October 25	1,056	419	589	646	96	557	1,686	1,566
November 1	1,033	416	768	707	127	535	1,813	1,570
November 8	1,094	470	814	795	180	655	1,293	1,927
November 15	1,099	382	825	797	173	654	1,293	1,871
November 22	1,075	560	818	797	174	676	1,580	1,746

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
September 20	1,015	497	2,329	286	4,573	151	2,293	1,600
September 27	1,059	423	2,245	332	4,602	178	2,239	1,649
October 4	956	563	2,351	313	4,927	144	2,382	1,723
October 11	1,039	478	2,398	344	4,942	151	2,525	1,639
October 18	932	446	2,352	362	5,002	182	2,355	1,637
October 25	834	485	2,229	315	5,034	180	2,285	1,613
November 1	894	571	2,307	297	5,121	213	2,496	1,668
November 8	796	611	2,416	327	5,095	185	2,654	1,654
November 15	878	574	2,294	364	5,016	201	2,648	1,727
November 22	941	468	2,359	369	5,196	192	2,685	1,796

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1958	1957
September 20	2,210	355	1,618	249	193	845	24,955	24,298
September 27	2,242	309	1,469	287	175	829	24,846	24,134
October 4	2,405	371	2,023	247	123	892	26,527	24,675
October 11	2,416	404	2,165	272	149	770	26,584	24,237
October 18	2,374	423	2,126	209	141	761	25,838	23,930
October 25	2,475	411	1,963	281	118	773	25,611	23,413
November 1	2,465	357	2,143	298	140	819	26,758	23,058
November 8	2,308	367	2,158	236	161	836	27,032	24,205
November 15	2,463	394	2,269	273	164	812	27,171	24,456
November 22	2,550	383	2,321	289	168	846	27,989	24,601

QUAKER OATS

(Continued from page 6)

the feed division, was host at a dinner.

"The new program is an adaptation of the original restricted feeding program in that total energy intake is controlled through use of a suitable fiber," officials said. "Thus, the birds can eat all they want all of the time, but they can't put on excess weight because their energy intake is strictly limited. They will go into the laying house big, strong, lean and healthy. Total feed costs are approximately the same as for birds full fed on regular growing mashes. Performance in the hen house is about equal to birds raised on the original restricted program and far superior to full fed birds on regular growing feeds. The plan results in delayed maturity, larger egg size, more eggs and less laying house mortality, and does it with less labor.

"Research has shown: Age at first egg delayed an average of six days compared to full fed pullets; pullets peaked at 3% more eggs than birds on full feed; eggs per hen housed averaged 20 more than for full fed sisters; as for length of production, birds on Pullet Developer averaged 12% greater production after 12 months of laying."

Feeding directions include: (1) Switch birds to Ful-O-Pep Pullet Developer after they have consumed 3 lb. of chick starter. (2) Keep Pullet Developer before birds at all times in hoppers, and let them eat all they want. (3) Feed no grain. Keep plenty of fresh water available. Supply hen size grit at all times. (4) Feed Pullet Developer until ready to house birds, usually at 5 to 10% production. Then switch flock gradually to regular production feed.

"Pullets will probably eat about 25% more Pullet Developer than ordinary feeds," officials said. "However, this feed is economical; growing pullets can eat a lot of it and still be grown at low cost."

Research Summary

Dr. Bruins and Dr. Wilhelm said feeding trials the past four years have led to these conclusions:

1. Energy restriction may be accomplished by restriction of total feed intake and also by full feeding rather low energy diets.

2. Restriction of energy intake delays onset of egg production. Delay of one to three weeks is considered desirable.

3. Early eggs laid by restricted pullets are larger than those laid by high energy full fed birds.

4. Body weights at 20 weeks of age are reduced by restriction. Low energy full fed birds show less reduction than those whose feed intake is limited. Body weights of restricted and full fed birds are not significantly different after 8 to 17 weeks of production.

5. Energy restricted birds by either restricted method are more resistant to extreme heat than high energy fed birds; they are more sensitive to cold.

6. Birds restricted by either means have less adipose tissue.

7. About one third less feed is required to produce a laying age pullet when restriction is employed, resulting in greatest economy. Birds fed a low energy diet consume one fourth more feed than birds full fed medium energy diets, but the lower energy diets are enough cheaper to result in about same total cost.

8. Feed consumption of restricted pullets when put on full feed has not been significantly different from full fed pullets during first 12 months of egg production.

9. Peak rates of egg production are usually improved 3 to 5% when restriction is employed during growing period.

10. Laying house mortality has been reduced by 3 to 15% in individual trials.

11. Reduced mortality and higher rate of lay combine to result in 10% more eggs per pullet housed.

12. Pullets restricted in energy intake by use of full fed low energy diets are generally more uniform than conventional restricted birds or those on high energy feeds full fed.

13. Restricted birds make better use of range than full fed birds.

Removal of Canada's Turkey Ban Sought

SALEM, ORE. — Paul T. Rowell, market development chief for the Oregon Department of Agriculture, has asked the U.S. Department of Agriculture Foreign Agricultural Service to continue its efforts for the earliest possible removal of Canada's embargo on imports of U.S. turkeys.

The Canadian Department of Agriculture recently amended its 100% embargo on imports of U.S. turkeys to permit a turkey import quota limited to 300,000 lb. of lightweight turkeys for the balance of 1958.

Mr. Rowell said this change indicates no practical relief to Oregon turkey growers. Around 15% of Oregon's turkey production in recent years has normally gone to Canada —mostly in the heavier breeds.

Canadian turkey growers, meanwhile, have declared their opposition to even the 300,000-lb. import quota. In answer, Douglas S. Harkness, Canadian Minister of Agriculture, told them Nov. 20 that import restrictions will be retained in 1959.

Mr. Harkness did not make a firm commitment, however. While import controls will be maintained, he said, no indication could be given at this time as to what quantities, if any, will be allowed as imports next year.

GMI Buys Interest In Safflower Plant

MINNEAPOLIS — General Mills, Inc., Minneapolis, has purchased a half interest in the Nebraska safflower processing plant of the Pacific Vegetable Oil Corp.

The announcement was made jointly by B. T. Rocca, Jr., president of Pacific Vegetable Oil Corp., San Francisco, and S. D. Andrews, General Mills vice president and general manager of the company's oilseeds division. The move continues the cooperative safflower development venture begun by the two companies in the fall of 1957.

"With the safflower crop now harvested in the great plains states, our interest in the Nebraska processing plant will provide General Mills with facilities to begin immediate production of safflower oil and meal," Mr. Andrews said.

The jointly-owned plant is at Sidney, Neb., in the western portion of the state near the Colorado border.

Farmers in the surrounding areas and in the northern great plains states planted thousands of acres last year to safflower, plant member of the thistle family, under growers' contracts. Safflower seeds are rich in edible oils which show promise for pharmaceutical use, are used in the paint and varnish industry, and have other industrial applications. Safflower meal is valuable as an animal feed supplement.

Georgia "Retaliates" Against Florida Rules

GAINESVILLE, GA.—The Georgia Department of Agriculture recently issued rules and regulations on fish and seafood which will put those commodities under regulations similar to those governing movement of Georgia poultry into Florida, according to a report in the Georgia Poultry Times.

The seafood regulation, the report said, requires inspection at the expense of the shipper or transporter and requires that all fish and seafood shipped into the state be marked with metal or plastic tags. The regulations were scheduled to become effective Dec. 15.

Regulations also were issued governing movement of citrus fruits into Georgia. They will prohibit selling any artificially colored citrus in the state. The measure also establishes tolerances on the amount of residual insecticides or fungicides on citrus fruit.

The Poultry Times said: "The Georgia poultry industry, with the active support of the Department of Agriculture, has sought in vain in recent months to obtain relief from Florida regulations which require that all poultry entering the state be graded. A special inspection tax is also imposed on dressed poultry going into Florida."

Editorially, the Times said, in part: "For many years Florida has been a 'thorn in the side' of her neighboring states with regards to free movement of agricultural commodities such as poultry and eggs into that state. . . . Georgia has now retaliated with citrus fruit and fish and seafood regulations which will be just as unpalatable to Florida's citrus and seafood industries as the poultry regulations have been to this state. We deplore the erection of artificial state barriers to the free movement of goods across state lines, but Georgia had exhausted all other means of obtaining a just settlement."

John Tarnstrom Dies

MINNEAPOLIS—John Oscar Tarnstrom, vice president and assistant treasurer of Security Food Co., Minneapolis, died suddenly of a heart attack recently. He was 57. Mr. Tarnstrom had been with the firm since 1926. Surviving him is his widow.

Swine Marketing Conference Set

AMES, IOWA — The question of what is going to happen in midwestern hog marketing will get a good deal of discussion at the Midwest Swine Marketing Conference Dec. 5 at Iowa State College.

Lee R. Kolmer of Iowa State said two leading market economists will examine the present swine marketing situation to find out how it may be improved—"perhaps by putting greater market bargaining power in the hands of producers."

W. W. Cochrane, president of the American Farm Economics Assn., will discuss the question: "Can Midwest Hog Producers Gain Bargaining Power in the Market?" H. R. Kiehl of the University of Missouri will speak on "Market Structure and Hog Marketing." Other talks and a panel discussion also are scheduled.

Opens Portland Office

PORTLAND, ORE. — Quain, Nugent & Co., Chicago and New York, announces the opening of a brokerage office in Portland to handle domestic and export grains. Establishing of the office marks the first time the firm has been represented on the West Coast. Manager of the local operation is Bev Wilcox, who boasts considerable experience in the grain industry as a former employee of Bunge Corp., Omaha, and Robin International, Inc., New York. Offices are located at 719 Board of Trade Building.

MARKETS

(Continued from page 2)

dairy feeds are carrying the brunt of the sales tonnage. So far there has been no bad weather in this region to give dairy feeds a boost.

During the week grain prices held firm, with the exception of corn, which eased 1 to 2¢.

Soybean oil meal was also weaker with 44% soybean meal unchanged to 50¢ off and 50% soybean meal down 50¢ to $1. Linseed oil meal, however, continued scarce, strong and up $1. Gluten meal held unchanged.

Fish meal held firm but some offerings are beginning to appear and this could be a forerunner of lower prices. Meat scraps held firm and unchanged.

Most of the middle proteins were higher, with brewers' grains up 50¢ to $1 and distillers' grains up $1 to $2. Gluten feed held unchanged but it is being snapped up and prices are likely to go higher. Hominy feed advanced $1 to $2 and alfalfa meal held steady.

There was enough demand for millfeeds to keep shipping positions tight and maintain advanced price levels.

Running time of formula feed manufacturers dipped to 32 hours last week.

Southeast

Although feed demand in the southeastern states is holding steady compared to recent weeks, broiler markets have declined to extremely low levels and are reported at 13¢ lb. f.o.b. farms. Supplies are reported to be burdensome and trade reports frequently indicate that the 10¢ lb. broiler is expected in the immediate future.

According to most expectations, feed business almost has to slow down considerably from the present rate of demand. According to many indications, feed ingredients, some of which have had a rather sharp advance in recent weeks, are beginning to drag and delayed shipping instructions and, in some cases, cancellations are being experienced.

From a demand standpoint, dairy

feeds are probably the vital spot in the southeastern feed picture, particularly in some areas where lack of moisture has become a serious problem.

Citrus pulp production in Florida is beginning to build toward increased production and some small producers who lack storage space have begun reducing sale prices in order to keep pulp moving in accordance with production schedules. In some instances this market has declined as much as $7.50 ton. Recently approved freight rates from some points of origin on beet pulp have also tended to aggravate this situation.

Most purchasing agents of feed manufacturers report that they are comfortable on feed inventories and are restricting additional purchases to those that are absolutely necessary for spot shipment. There is still a feeling within the territory that feed prices on ingredients through manufacturers mixed feed will have to decline from present levels in the not too distant future.

Central States

The feed industry in the central states celebrated Thanksgiving Day with real sincerity. "We have had an excellent year, and business is holding up well even in the final months," was the feeling voiced in many quarters.

For the current week, order backlogs were building up, and one manufacturer in the area said he planned schedules for some days of next week early this week. The Thanksgiving Day holiday caused production to be lost Nov. 27.

Hog and cattle feeds seemed to be leading the demand list, and dairy feeds are expanding somewhat. Turkey feeds are almost finished. Poultry feeds are not moving in unusual volume, but demand is steady. There is some feeling that price reductions might be permitted if a new, lower rate structure on soybean oil meal goes into effect Dec. 1 as planned.

Mountain States

It is the consensus of the feed dealers that sales have increased over the past week and are much better than a year ago at this time.

Cattle and sheep feeds have been getting the most demand and the increase is due to the larger number of livestock being fed. Sales in cattle and sheep feeds are very much up from the previous week and also a definite increase over the same time a year ago. Most of the feed is being purchased by the dealers in the feed industry for immediate sale rather than for inventory buildup.

South Central

Formula feeds continued to move in good volume this week, but some mixers believed that there were indications that demand might slow down a little. They base their thinking on the belief that their dealers bought more feed than they sold in the past few weeks. The stiff advances coming up each week in price lists were well advertised ahead of publication and buyers had a fine opportunity to build up inventories without running much of a risk. Now that prices seem to be leveling off, the tendency will be to live off inventory.

Hog and pig feeds continue to be the leading items. Demand for cattle feeds is good but not showing any improvement for the week. Slow moving items are dairy and broiler feeds.

Mill running time is five days, mostly two shifts. Feed mills had little overtime to report last week and several indicate that they do not expect to run overtime to make up for the holiday.

Ohio Valley

After several days of record high temperatures last week in the Ohio Valley, more seasonable weather prevailed this week, and with the subfreezing weather being predicted, a definite upturn in formula feed volume is being noted, with added overtime necessary to offset the holiday.

It is generally believed that, with the advent of a spell of freezing weather, the market will move to considerably higher volume because of the recent holding back in placements of orders due to the combination of weather, ample farm crops and hoped-for stabilization of prices.

Currently, the demand for broiler feeds is showing marked improvement, as growers ready their birds for an anticipated excellent late winter and early spring retail demand. Sales of most other formula feeds held steady to stronger this week.

With consumer attention presently focused on poultry, receipts of cattle, hogs and lambs declined appreciably at area stockyards this week, resulting in prices for red meats holding steady. At the same time, poultry was moving out readily at 14@15¢ lb., f.o.b. farms, depending on weight.

Pacific Northwest

Further price advances for a number of feed ingredients more than offset fractional declines posted by a limited number of items during last week's feed market trading.

Trading action was considered moderate by representative Portland and Seattle feed mixers with the region's feeding operations on a full winter basis.

Feeders and feed manufacturers provided daily interest for immediate and prompt requirements as well as anticipating forward requirements. Formula feed sales continued at a volume rate and were led by broiler and egg mashes along with dairy feeds.

Most name brand feeds were priced slightly higher during the trading period to reflect recent ingredient price gains.

Quotations for cottonseed meal advanced $3 ton while wheat millfeeds were priced $2 higher with soybean meal up 50¢ to $1 ton from the previous week. Meat and bone meal prices gained most when they jumped $5 to $7.50 ton on the basis of tight supplies.

Fish meal values declined 5¢ a protein unit and blackstrap molasses slipped another $1 ton in the face of larger supplies and a lack of buying interest.

Feed grain prices followed a mixed trend with barley listings losing 50¢ ton while milo gained this amount and all other items held unchanged.

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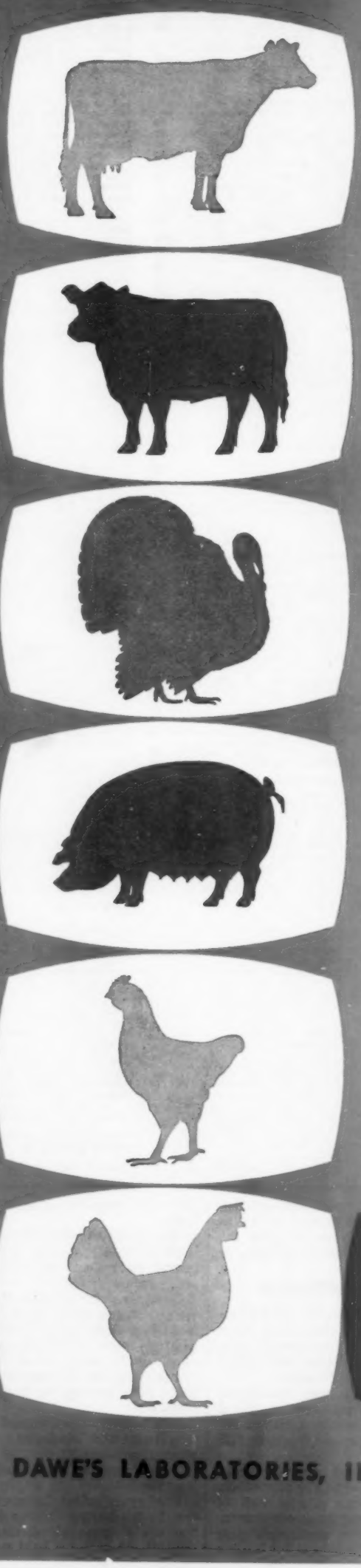

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